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*EXTRACTIVE INDUSTRIES AND  
THE POOR IN AFRICA – A CASE  
STUDY OF COAL MINING IN THE  
MUI BASIN, KENYA*

**Radboud University Nijmegen**



# **Extractive Industries and the Poor in Africa – A Case Study of Coal Mining in the Mui Basin, Kenya**

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## **Executive Summary**

In many resource-rich developing countries the extraction of natural resources has led to negative development performances. Natural resource extraction is often accompanied by corruption, poor governance, violent conflicts, poorer economic performance, environmental pollution and social grievances. On the other hand, investments in the extractive sector in developing countries induce economic growth and might generate income and employment opportunities. This study argues that the poorest often do not benefit from the positive impacts of growth in the extractive sector, but rather suffer from the negative consequences.

In a first step the theoretical frameworks of poverty and poverty reduction as well as the scientific debate on the political, economic, social and environmental impacts of natural resource extraction in developing countries are explored. Thereby, it is argued that the extractive sector in African developing countries does not provide adequate possibilities for a participation of the poor. The political and economical risks that accompany natural resource extraction do, on the other hand, harm the poor the most. Moreover, extractive industries have particular negative impacts on the environment and, thereby, on the livelihoods of the poor.

Secondly, this study introduces a case study from Central Kenya. The country is on the verge of important developments in the extractive sector due to recent resource discoveries. In the Mui Basin, Kitui County, coal deposits have been discovered and exploitation is going to begin in the near future. A survey undertaken with 75 households generally reveals a mixed picture of people's perceptions and expectations towards the mining project. Responses show, however, clear correlations with regard to the gender, age, education and relative wealth of respondents. Better educated, wealthier, younger and male respondents perceive the mining project positively. Contrarily, lower educated, poorer, older and female respondents consider the project negatively. The perceptions of the respondents of the Mui Basin thereby confirm the argument of this study; the most vulnerable and poorest are unlikely to benefit from developments in the extractive sector, but rather suffer from its negative impacts. Therefore, if the extractive sector in developing countries is to be developed, particular measures need to be undertaken to include the poor, without jeopardizing their livelihoods.

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## Acronyms

BSA	Benefit Sharing Agreement
CSR	Corporate Social Responsibility
EIA	U.S. Energy Information Administration
EITI	Extractive Industries Transparency Initiative
ExIm Bank	Export Import Bank
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HDI	Human Development Index
IMF	International Monetary Fund
KNBS	Kenya National Bureau of Statistics
MCMP	Mui coal mining project
MDG	Millennium Development Goals
MEPo	Ministry of Energy and Petroleum
MPI	Multidimensional Poverty Index
NDMA	National Drought Management Authority
NEMA	National Environment Management Authority Kenya
NEP	Kenya National Energy Policy
NGO	Non-governmental Organisation
ODA	Official Development Assistance
SEKU	South Eastern Kenya University
UNDP	United Nations Development Programme
WB	World Bank
WHO	World Health Organisation

## 1. Introduction

The extractive sector has so far only played a minor role in Kenya's economy. Recent discoveries of minerals as well as oil and gas are, however, likely to increase the extractive sector's weight. Other African nations have experienced a boom in their extractive sectors during the past decades fuelled by a growing demand for minerals and fossil fuels of emerging economies such as China and India. Foreign investments in the African extractive sector have increased steadily during the past decades and particular Chinese investments have been at the centre of attention and critic. Chinese resource projects have been criticised for being unfairly supported by state subsidies, collaboration with sanctioned regimes and low labour standards. Generally, however, western financial institutions such as the World Bank or the IMF are supporting the development of the extractive sector in Africa and other developing countries. The Structural Adjustment Programmes that African countries implemented during the 1980's were partly directed at liberalizing the extractive sector and privatizing state run mining companies. By attracting foreign investments it was hoped that economic growth would also be generated in other sectors.

During the past decades many African countries have seen relatively high economic growth rates due to a booming extractive sector, but little progress has been made in regard to the reduction of poverty. Growth in the extractive sector has not translated into overall economic growth and the liberalization of the mining sector has decreased tax revenues, leaving less funds for pro-poor programmes. Moreover, the extractive sector itself has not provided sufficient and adequate employment opportunities for the poor. The World Bank, one of the biggest proponents of the promotion of extractive industries in developing countries, has very recently admitted that extractive industries yield little benefit for the development of the economy and the reduction of poverty. On the other side the negative effects of mineral dependence have for some time been the subject of scientific debates. These range from economic impacts ('Dutch Disease') to poor governance, corruption, violent conflicts, environmental damages and social grievances within communities. Underdeveloped legal frameworks and weak institutions in developing countries increase the susceptibility to these impacts. Therefore it needs to be questioned whether developing countries should tap their mineral resources after all. Kenya has encountered relatively stable economic growth over the past decade, which has not been fuelled by the extractive sector. At the same time income poverty has been reduced. A growing extractive sector might thereby jeopardize the improved situation of Kenya's poor.

In the Mui Basin in Kitui County, Central Kenya coal a coal mine is about to go into operation. A Benefit Sharing Agreement has been signed in December 2013 between the Kenyan government and a Chinese mining company, Fenxi Mining Ltd.. The County is one of the poorest in Kenya and local communities have expressed hopes that the project would bring economic development but also fear

forced relocation and greater poverty. On the macro-economic level, however, the exploitation of domestic coal reserves might help Kenya to reduce its import bill, increase electricity generation and promote industrial production due to lower energy costs.

This thesis aims to explore the relations between the extractive sector and poverty reduction in Sub-Saharan Africa. The basis of this thesis represents the analysis of data collected during field research in the Mui Basin in Central Kenya from April to August 2014. The field work focused on household surveys in local communities to explore the perceptions and awareness of potential positive and negative impacts of the coal mining project. Mining operations had not started at the time of research; the surveys have therefore been of an explorative character. The exploration of the scientific debate and case studies from Sub Saharan Countries form the wider basis of this thesis. Thereby, it shall be assessed which impact a growing extractive sector in Kenya in general, and the Mui coal mining project in particular, will have on the poor.

**The thesis statement is: The development of the extractive sector in Kenya does not only have limited impacts on poverty reduction but potentially harmful effects on the livelihood basis of the poorest.**

This work is structured as follows: Firstly, the theoretical background of the relation between economic growth and poverty reduction will be explored in chapter 2. The definition of poverty and most of all the mode of measurement is crucial in developing poverty reducing strategies. The chapter will therefore explore different theoretical concepts of poverty. Strategies of poverty reduction evolve around the concepts of Pro-Poor Growth and Inclusive Growth, which will be explored in the following. Lastly, the chapter will explore how economic growth can be most beneficial for the reduction of poverty and which patterns of growth are potentially harmful to the poor.

Chinese investments in natural resources in Africa have attracted much attention in the last decade. A brief exploration of Chinese resource investments will be made in chapter 3. Thereby, it shall be discussed whether Chinese investments yield particular impacts on poverty. The chapter will explore in which sectors and countries Chinese Investments have been undertaken and in which manners these investments differ from those originating from other (western) countries.

In chapter 4 the scientific debate on impacts of extractive industries on the poor in developing countries will be explored. Thereby the chapter examines impacts that might occur on the macro-level, particularly with regard to effects on the economy and the political system, and micro-level impacts affecting local communities in the surroundings of mining projects.

Chapters 5 to 8 will explore how the theoretical considerations apply in the case of the MCMP. Chapter 5 explores the political, legal and institutional frameworks of the developing extractive sector in Kenya. After the recent discoveries of natural resources the government has made efforts to develop policies and adapt the legal frameworks. However, reforms have so far only partly been implemented.

Therefore the chapter will explore the current and prospective legal framework for the extractive sector in Kenya and establish the actual valid framework for the MCMP.

Chapter 6 will then give a brief introduction to the region and the population of the Mui Basin and present specific and technical details of the coal mining project. Moreover, the chapter will give an overview of the current development of the project and reactions within the local community.

The methodology will be discussed in chapter 7. In chapter 8 the results of the household surveys conducted during the author's fieldwork will be presented. After a brief characterization of the households interviewed, the perceptions of respondents in regard to the project will be presented and tested for correlations in regard to gender, age, education and the relative wealth of respondents.

Lastly, chapter 9 represents the conclusion of the thesis. Under consideration of the theoretical exploration, the current frameworks of the extractive sector in Kenya and results of the field data analysis the likely impacts of the MCMP on the economic, political, environmental and social levels will be summarized.



## **2. Poverty, Pro-Poor Growth and Inclusive Growth – An exploration of the theoretical frameworks**

The reduction of global poverty is one of the crucial challenges in current development assistance. Halving global poverty by 2015 is one of the stated Millennium Development Goals. Globally, this goal has already been achieved, not least because of China's impressive economic growth during the past decades. Sub-Saharan Africa, on the other hand, has so far only achieved 35% of this goal (WB 2014: 14). The World Bank has recently postulated the post-2015 agenda to reduce the share of people living underneath the 1.25\$ poverty line to 3% worldwide by 2030. For the first time the Bank states that economic growth alone will not be sufficient to reduce poverty, but that there needs to be a focus to improve the incomes of the bottom 40% (WB 2015). Achievements or failures in global poverty reduction are closely related to the definition of poverty. The 1.25\$ per person a day poverty line has been the base for the MDGs as well as for the World Bank's assessments. Poverty, however, is more than solely a shortfall in income or consumption. Exclusion, discrimination, little education and poor health are undoubtedly further indicators that describe the situation of the world's poor.

Moreover, there has been a large debate about the policies and economic strategies that should be applied to improve the lives of the poor. The state has undoubtedly an important role in improving particular aspects of poverty, such as education, health and participation in decision making. The aim of this chapter is, however, to explore the opportunities that economic growth can deliver to the poor. Naturally, growth that occurs in the sectors and regions where the poor are present is deemed to be most beneficial for poverty reduction. Nevertheless, the ongoing rationale of governments and international development organizations has for a long time been to promote general economic growth and expect trickle-down effects to all parts of the society. But not only do some forms of economic growth not improve the lives of the poor; they might even have detrimental effects, by using, polluting or even destroying resources that the poor depend on.

This chapter firstly explores the various approaches on poverty. Secondly, the focus will be directed on poverty reducing economic frameworks. Thereby, the concepts of pro-poor growth and Inclusive Growth will be explored.

### **2.1 Poverty Definitions**

Defining poverty holds a number of questions on factors to include and methods of measuring. Should the focus for instance only be laid on material aspects of poverty or are social or cultural aspects to be included? Secondly, who should be included in the measurement? Certainly children face other forms of deprivation than adults or the elderly do. Is it therefore meaningful to focus on individuals or households? Additionally, individuals might experience periods of poverty and of relative wealth during their life. Often people that have managed to climb out of poverty fall back into it due to economic shocks or natural disasters. Therefore the question about the time span of poverty measurement also

emerges. In the Copenhagen Declaration (of the World Summit for Social Development in 1995) poverty is defined as a:

*“lack of income and productive resources sufficient to ensure sustainable livelihoods; hunger and malnutrition; ill health; limited or lack of access to education and other basic services; increased morbidity and mortality from illness; homelessness and inadequate housing; unsafe environments; and social discrimination and exclusion. It is also characterized by a lack of participation in decision-making and in civil, social and cultural life.”*

And Absolute Poverty is defined as:

*“a condition characterized by severe deprivation of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. It depends not only on income but also on access to social services.”*

Thus, poverty includes many dimensions. In order to get an inside on the perceptions of poverty by the poor themselves, the World Bank conducted wide-reaching surveys in 60 countries interviewing more than 60,000 people (Narayan et al. 2000). The results have partly confirmed the accuracy of the before mentioned poverty definition. The world's poor are, however, emphasizing more on different aspects of poverty. Powerlessness and Vulnerability towards state institutions, authorities and wealthier people are major issues for the poor. In this regard corruption is one of the crucial issues poor people are concerned about. Moreover, the world's poor are emphasizing more on the importance of assets than on income to cope with shocks or natural disasters threatening their livelihoods.

These definitions underline the multidimensionality of poverty. Although this multidimensionality is recognized by all major development organizations, poverty indexes include only some dimensions of poverty. Limitations are necessary because data availability might be limited and comparison between countries will become increasingly difficult the more aspects of poverty are included. Arguably, the two principal indexes of poverty are the World Bank's consumption or income based assessment and the UNDP's Multidimensional Poverty Index. The basis of these two indices is laid by two different approaches which will be explored in the following.

The **monetary approach** measures a shortfall in income or consumption. To assess this shortfall a certain threshold is defined underneath which an individual is considered to be poor. This is called the poverty line (Laderchi et al. 2006: 10). The 1.25\$ per person a day threshold, introduced by the World Bank, is arguably the best-known. It is based on the average poverty line of the world's 15 poorest countries (UN 2009: 48). The Millennium Development Goal to halve global poverty by 2015 is for instance judged on how many people are living below the 1.25\$ poverty line by 2015 as compared to 2000. The poverty line might also be defined around different thresholds. A 2\$ dollar a day poverty line has, for instance, been introduced as well as a 0.70\$ poverty line that defines severe poverty and is based on the average consumption of the poor in Sub-Saharan Africa (Samman 2014: 17). In order to make results comparable a Purchasing Power Parity (PPP) exchange is used. Thereby, a basket of

services and basic goods is defined based on caloric requirements. The actual ingredients of the basket might, thereby, differ between countries (UN 2009: 49). It has been criticized that evaluations of caloric values are mostly undertaken externally and are ignoring differences in age, gender, household compositions and different energy needs due to varying occupations (Laderchi et al. 2003: 250). Furthermore, there might be a difference of basic needs and in prices of basic products between the poor in rural and urban settings. The 1.25\$ poverty line allows no conclusion about the situation of the poor underneath the poverty line, thus whether, for instance, most of the poor live just below the poverty line or whether the gap is wider. To assess the situation of the poor the depth of poverty or the poverty gap might be additionally calculated. The depth of poverty is the average income of the poor in comparison to the poverty line in a country. This can be indicated by the poverty gap index that represents the mean shortfall of the poor's incomes from the poverty line in percentage (Olinto et al.: 3).

The monetary approach has been criticized for a number of reasons. It has, for instance, been pointed out that there are large discrepancies between the share of people living underneath the poverty line and those suffering from hunger. The absolute number of poor people has been falling since the 1990s whereas the number of people suffering from hunger has increased (UN 2009: 1). Therefore, US\$ 1.25 per person per day might not be sufficient to satisfy the poor's basic needs. Likewise, scholars have criticized that the World Bank extrapolates its estimates from a very limited set of data (Reddy & Pogge 2010: 43). Another critique arises when considering the definition of poverty by the poor themselves. As pointed out, the poor consider their assets more important than their incomes to secure their livelihoods. The monetary approach, however, focuses on incomes or consumption. The following example demonstrates why this focus might be problematic: a poor household might be forced to sell parts of its assets to cover for an emergency situation, for instance to buy medicine for an ill member of the household, thereby risking the long term survival of the household. The monetary approach, however, would indicate an increase in consumption and an improvement of the household's situation (UN 2009: 53-55). Lastly, some basic needs might not be met even if a household possesses enough income. Education and health services might, for instance, not be delivered by the state. Furthermore education might be withheld from children due to religious motivations (for instance withholding education for girls) (UN2010: 62).

The **capability approach**, in contrast, defines poverty as the deprivation from basic capabilities needed to live a valued life (Laderchi et al. 2006: 11). Capabilities are a person's opportunities or freedoms to satisfy its basic needs, for instance adequate nutrition, good health and education (Robeyns 2006: 351). By focusing on a person's capabilities no concept of basic needs is imposed. The pioneer of this approach, Amartya Sen, did purposely not define these basic capabilities, because depending on the assessment or evaluation one wants to make, different capabilities become relevant (Alkire 2005: 127). The capability approach focuses on the kind of freedoms individuals possess and which obstacles exist that deprive people from their basic capabilities (Robeyns 2005: 94). A person might, for instance,

identify education as a basic need. Measuring this person's capabilities to satisfy this need would then include whether this person is able to achieve an educational level, thus the ability to pay school fees and nutrition but also which obstacles this person faces (i.e., is the state delivering educational services, does the person has the right to education). Monetary indicators are not considered within the capability approach, since individuals use monetary resources differently in transforming them into their capabilities (Laderchi et al.: 253). The approach has found application inter alia in the UNDP Human Development Index (HDI) and the Multidimensional Poverty Index (MPI). The HDI assesses three human capabilities: The capability to life a long and healthy live (measuring life expectancy at birth), a decent standard of living (by assessing the GNI per capita) and the capability to acquire knowledge (by evaluating mean and expected years of schooling) (UNDP 2014a). The Multidimensional Poverty Index evaluates the standard of living, health status and education by assessing 10 indicators. These are school attendance, nutritional status, child mortality, access to electricity and safe drinking water, access to sanitary facilities, use of clean cooking fuel, housing conditions and the possession of assets for information, mobility and livelihoods (i.e. mobile phones, modes of transport, livestock). A household that is deprived of at least 3 of these indicators is considered multidimensional poor (deprivation of at least 5 indicators indicates a severely multidimensional poor household) (UNDP 2014a).

There are two further approaches that will be presented briefly. The **concept of social exclusion** has been introduced to measure marginalization of groups or individuals in both developing and developed countries (Laderchi et al. 2006: 11). It has been argued that exclusion is related to a limited access to assets, a limited ability to generate products and participate in the market economy, restricted access to basic needs and social services and impediments for not having full citizenship (UN 2009: 65-66). Thus, social exclusion might, for instance, occur on the basis of discrimination of race, ethnicity and gender, but also due to inequality in incomes or assets, unemployment or due to spatial distinctions (for instance between urban and rural spaces). The concept of social exclusion is linked to the capability approach. As Sen points out, social exclusion can be both part and cause of a deprivation in capabilities (Sen 2000: 5). For instance, the exclusion from social services might increase poverty which will then lead to other deprivations (i.e. in regard to health). The concept of social exclusion shifts the focus away from income, assets or basic needs towards the obstacles the poor are facing trying to climb out of poverty. It undertakes an evaluation of the 'structural characteristics' of a society (Laderchi et al. 2006: 11). Therefore, it should be considered very valuable in explaining the persistence of poverty and restrictions to social mobility. On the other hand, the concept does not offer methods to measure poverty. Consequently, it has not found entrance into current poverty indices.

Lastly, the **participatory approach** puts the emphasis on the poor themselves in defining poverty (Laderchi et al. 2006: 11). As argued in the introduction of this chapter, the World Bank has followed this approach and undertaken a unique survey to assess the poor's definition on poverty

(Narayan et al. 2000). Poor people particularly pointed out their vulnerability and powerlessness in the face of state institutions and the rich. The participatory approach therefore delivers important insights and is of use to other approaches in defining and choosing indicators of poverty and in developing poverty-reducing strategies.

The different approaches to poverty do not only differ on their focus on different aspects. Poverty rates and the people identified as poor differ greatly depending on the approaches employed (Laderchi et al. 2006: 10). The indicator that is most commonly used is arguably the World Bank's 1.25\$ per person a day poverty line. Although there are many weaknesses inherent to this approach, its greatest advantage is the availability of data for almost every country. Trends in poverty are therefore easily traceable. However, it has been argued that collecting data for income and expenditure is a complex procedure that involves many occasions for errors. Households may, for instance, not always be willing to reveal their income situation. The collection of non-income poverty indicators (for instance years of schooling) on the other hand is less prone to errors (Sahn & Younger 2010: 373). Moreover, to understand the reasons for poverty and the opportunities for an escape from poverty, non-monetary approaches are more useful. There are a number of factors that might prevent the world's poor from climbing out of poverty. Increases in incomes might be hindered by poor access to markets or due to discriminating practices in employment opportunities. A good health status and education might depend more on the ability of a state to deliver appropriate services. Some scholars have also argued that specific mechanisms leave poor countries and individuals trapped in a circle of poverty. Self-enforcing mechanisms are for instance low saving rates in poor countries that in turn result in low investments, poor nutrition that impacts negatively on the poor's productivity or the geographical location that leaves people in isolated rural areas trapped in low productivity work conditions (Kraay & McKenzie 2014). The concept of the poverty trap has had implications on policy making and development projects. If the trap would truly exist, it can be argued that a singular effort might eradicate the poverty trap and lift people out of poverty. Jeffrey Sachs famously argues for a big push through development aid that should help poor countries to climb out of poverty permanently (Sachs 2006). The Millennium villages are, for instance, trying to improve the lives of the poor through 10 year assistance with the aspiration to lift people out of poverty permanently. Microloan schemes are a further example. On the other hand the very existence of poverty traps has been questioned due to limited empirical evidence (Kraay & McKenzie 2014).

Another debate has focused on the patterns of economic growth that are most beneficial to poverty reduction. Clearly if the opportunities that arise with economic growth shall be shared by the poor, it has to occur in sectors and locations where most of the poor are present. The following sub-chapter explores the recent scientific debates on Pro-Poor and Inclusive Growth.

## 2. 2 Exploring the concepts of Pro-Poor Growth and Inclusive Growth

How can economic growth yield benefits for the poor? For some time it has been assumed that by promoting economic growth, positive effects will eventually trickle-down to all parts of society. In more recent debates, however, it was recognized, that in order to eradicate global poverty a sole focus on economic growth is not sufficient. The World Bank in its recent poverty eradication strategy, for instance, recognizes the need to increase the income of the bottom 40% in order to eliminate poverty by 2030 (WB 2015).

Poverty rates do not automatically decrease during economic growth and might in fact even increase (Kakwani et al. 2004: 3). Furthermore, economic growth does not necessarily translate into higher employment rates (Ramos et al. 2013: 37). If at all, economic growth has a mixed impact on poverty reduction. It has for instance been pointed out that a 1% increase in per capita income might reduce income poverty between less than 1% to up to 4% (Ravaillon cited in ODI 2008: 1). As a study of economic growth in 80 countries between 1984 and 2001 suggested, pure economic growth had poverty reducing effects only in a quarter of the cases, in Sub-Saharan Africa in only 20% of the cases (Son 2007: 3-4). Moreover, the poor are often excluded from economic opportunities. Their access to markets might be limited due to bad infrastructure and consequently high transportation costs. The lack of assets impedes the poor from making investments. Poor education and discrimination due to race, ethnicity or religion might exclude them from employment opportunities (ODI 2008: 2-3).

For economic growth to reach the poor and enable them to benefit the focus needs to be shifted towards the patterns of economic growth, thus, its sectoral and geographical distribution and whether it engages the poor's assets, which are mainly non-skilled labour and land (WB 2015: 13-14). This realization has led to the concept of Pro-Poor Growth, which focuses on how the poor can participate in and benefit from economic growth (OECD 2008: 36). Although, the concept is far from being clearly defined, two basic lines of argument can be distinguished; a relative and an absolute approach to Pro-Poor Growth.

The International Policy Centre for Inclusive Growth (IPC) has defined growth pro-poor, if the benefits for the poor are relatively higher than for the non-poor (Kakawani et al. 2004). Thus, the income or consumption levels of poor households compared to non-poor households need to increase faster during economic growth spells or decrease slower during periods of negative economic growth (Son & Kakwani 2007). The relative approach to Pro-Poor Growth thus puts the focus on the reduction of inequality.

The World Bank on the other hand has argued in favour of a broader approach. Economic growth is thereby considered pro-poor as long as the poor benefit from it. Thus, any economic growth that has beneficial effects to the poor is defined as pro-poor (Ravaillon 2004). The Bank argues that a focus on inequality might include scenarios where a shrinking economy reduces unequal income distributions without delivering benefits for the poor in absolute terms. Very recently, however, the

World Bank has admitted that in some cases growth does not translate into poverty reduction and that the focus should be shifted towards the reduction of inequality as well (WB 2015: 13). Others have argued for a combination of both approaches. Osmani (2005), for instance, argues that the absolute definition of Pro-Poor Growth includes all economic growth spells without taking into account issues of inequality, whereas the relative definition ignores pro-poor outcomes in high but unequal economic growth scenarios. In other words, the poor might benefit more in absolute terms from high but less distributive economic growth than from low but inequality reducing growth. Thus, positions on the definition of Pro-Poor Growth differ. Consequently, evaluations of the poverty reducing impacts of economic growth are divergent as well. The absolute approach on Pro-Poor Growth measures the rate in which incomes increase generally (OECD 2008: 36). The relative approach, on the other hand, measures the incomes of the poor in relation to incomes of the non-poor over time. Thereby, a poverty equivalent growth rate (PEGR) is defined that considers reductions of inequality and poverty during a period of economic growth. If the PEGR is growing at a higher pace than the economic growth rate, incomes of the poor grow relatively more rapid and growth might therefore be considered pro-poor (Kakwani et al. 2004). Both approaches base their assessments on the monetary approach to poverty, thereby ignoring the multidimensional nature of poverty.

In the recent scientific debate the focus on inequality has become crucial in the discussion about Pro-Poor Growth. Increasing inequalities might jeopardize global poverty reduction in the long term. The World Bank has, for instance, pointed out that, if inequality levels further increase, developing country's economies would need to grow at an unparalleled rate to have a poverty reducing effect (WB 2015: 37). There are a number of reasons why rising inequality is detrimental both for poverty reduction and economic growth. Price increases of basic products during economic growth spells are particularly harmful to the poor, especially if they are unable to benefit (Grinspun 2004). Moreover, it has been pointed out that income inequality is related to a fractionalization of health and educational statuses. Low skilled workers have fewer chances to find employment and consequently less means to cover for health costs (OECD 2014: 10). Moreover, as noted above, the poor are often excluded from the economy due to several reasons (discrimination, poor skills). Inequality of assets, furthermore, prevents investments and neglects the poor access to loans (OECD 2014: 78). In the long run high levels of inequality are therefore not only harmful to the poor but even to general economic growth.

The focus on inequality in the discussion about Pro-Poor Growth has resulted in the emergence of the concept of Inclusive Growth. Even though, the concept is as weakly defined as Pro-Poor Growth, it has become very present in policy and development debates (Ranieri & Ramos 2013: 7). Inclusive Growth is a broader concept than Pro-Poor Growth. Inherent is a pattern of economic growth that reduces both poverty and inequality (Ramos et al. 2013). Approaches vary, focusing on creating employment opportunities or the improvement of existing jobs, on income gains for the poor, education and health, human capabilities or social protection (Ali & Son 2007, McKinley 2010, OECD 2014: 79). It

therefore responds better to the multidimensionality of poverty, instead of solely focusing on incomes and inequalities. The concept is, furthermore, not only centred on the situation of the poor. Inclusive Growth instead aims to promote benefits to all segments of society (Klasen 2010:2).

### **2. 3 Making economic growth beneficial to the poor**

In order to yield positive effects to the poor, economic growth needs to be high and stable and occur on a broad base across economic sectors (OECD 2007:29). Moreover, geographical and sectoral patterns (thus, in which regions and economic sectors growth occurs) are playing an important role. In China, for instance, economic growth has not translated into the reduction of income poverty since 2000 (OECD 2007: 24-25), even though growth rates have been high. Since the majority of the world's poor are still living in rural areas, economic growth that occurs in these areas will consequently have the highest positive impact (Ravaillon 2004: 16-17).

The creation of employment has, arguably, the highest impact on inclusive and Pro-Poor Growth. The high poverty reduction rates in East Asia have for instance been achieved because of growth in sectors with high employment rates (industries and modern services) (Khan 2007:14). Moreover, as a case study of eight developing or emerging countries that have been relatively successful in turning economic growth pro-poor suggests, households that primarily were engaged in the agricultural sector have experienced a large reduction in poverty (Cord 2007: 12). Growth in the agricultural sector might indeed have a better effect on poverty reduction as it has, arguably, a double effect; increased agricultural productivity improves the livelihoods of the poor directly (a 10% increase in crop yields reduces poverty by up to 10%) and opens capacities for the manufacturing and service sector (OECD 2007: 26). In Africa, on the other hand, a high dependence on mineral exploitation has translated into growth with little employment creation. Consequently the effect of economic growth on poverty reduction is only one third of the average in developing countries (WB 2015: 44). Tunisia has been pointed out as an example for the importance of Inclusive Growth: Sound GDP growth rates (due to a growing oil sector), relatively low inequality and poverty rates but at the same time a high unemployment rate have eventually lead to social unrest and initiated the Arab Spring (Ramos et al. 2013: 23).

Furthermore, it has been argued that in order to promote Pro-Poor Growth, efforts have to be directed to improve the poor's access to markets. Solely improving general market conditions, by for instance liberalization policies, might in the end have no effect on the poor (Kimenyi 2007:26-27). Improving the access of the poor to markets entails various actions. Those include efforts for more equitable land distributions, amelioration of rural-urban infrastructure links for better access and the provision of education and training measures to increase productivity (OECD 2007: 26; Kimenyi 2007: 26-27).

Lastly, the poor are particularly vulnerable to economic shocks or natural disasters (OECD 2007:

28). Particularly in rural or remote locations the poor might find themselves trapped in a vicious circle of poor opportunities and little protection (Kraay & McKenzie 2014). Therefore, it has been argued that the implementation or improvement of safety nets that help the most vulnerable during shocks should form a major part of Inclusive Growth approaches (WB 2015: 8).

As argued above the concept of Inclusive Growth is not a well-defined one and different actors might focus on varying aspects. To give a brief overview on how the concept has translated into development assistance practices, the approaches of four major global development actors will be briefly discussed in the following.

The World Bank's definition of Inclusive Growth has been related to its absolute approach to Pro-Poor Growth, thus, focusing on fostering general economic growth. Sustained and broad based growth would create employment opportunities that reach the majority of a country's labour force (Lanchovichina & Lundstrom 2009). However, in recent years the Bank has recognized the need to focus on the reduction of income inequality as well; reducing global poverty to 3% by 2030 will not be achievable solely with economic growth policies but also needs to focus on reducing inequality (WB 2015: 12). The 'twin goals' of the World Bank therefore define Inclusive Growth as a reduction of the total share of people living beneath the 1.25\$ poverty line and improvements of the income or consumption levels of the bottom 40% of the population (in developing as well as high income countries)(WB 2015). However, inequality is still representing a minor aspect in the World Bank's strategy, since no normative objectives on income inequality reductions are made. A threefold approach is put forward to achieve Inclusive Growth: increasing investments in human capital, extending safety nets and promoting sustainable or green growth (WB 2015). The necessity for sustainable or green growth is particularly singled out, since the poor are most affected by degradation and pollution and the depletion of natural resources (WB 2015: 48-49).

The IPC defines Inclusive Growth as growth that reduces poverty, inequality and creates employment. Economic growth is seen merely as a mean to achieve these goals. An IPC study on the inclusiveness of economic growth suggests that GDP growth only had a minor impact on inclusiveness, whereas poverty reduction efforts were most important (Ramos et al. 2013). In order to measure the inclusiveness of economic growth, the IPC has developed an Inclusiveness Index. This index includes the share of people living underneath a 2\$ a day poverty line, income inequality and employment (Ramos et al. 2013:4).

The Asian Development Bank has extended its approach to Inclusive Growth further, focusing on economic growth, poverty and inequality, but also on human capabilities and social protection. Economic growth thereby represents the most important part of its Inclusiveness Index (25%), followed by indicators of employment, income inequality, as well as geographical and gender inequalities. Minor indicators include health, education, access to infrastructure and social protection (McKinley 2010).

The OECD suggests three main indicators to measure the inclusiveness of economic growth: income, health and employment (OECD 2014). The focus is put on monetary policies that reduce inflations, public redistributing transfers and a promotion of formal employment to include the poor into social protection systems. It is suggested to finance parts of the social protection system by international development aid (OECD 2014).

## **2.4 Conclusion**

This chapter has explored the different concepts of poverty and poverty reduction. A clear definition of these concepts does not exist. However, the multidimensionality of poverty has been widely agreed on. It is therefore argued here, that the Multidimensional Poverty Index is a more useful tool to measure poverty in all its dimensions. The same accounts for the measurement of economic growth impacts on the poor. The Pro-Poor Growth approach is mainly centred on incomes and inequalities. However, economic growth might have impacts on several dimensions of poverty. The concept of Inclusive Growth can therefore deliver a more valuable focus. Economic growth if it shall be beneficial to the poor needs to deliver employment opportunities for the low skilled workers. It needs to occur in the geographical locations and sectors in which most of the poor are living and working in, without depleting or destroying the natural resources that they depend on. In Sub-Saharan Africa, where most of the poor are living in rural areas, the promotion of agricultural growth would therefore deliver the most benefits to the poor. Furthermore, the state has an important role in distributing the yields from economic growth to all parts of the society, through investments in education, health and infrastructure and the provision of social safety nets for the poorest.

Chapter 4 will explore in what manners growth in the extractive industries sector can deliver benefits to the poor. But first this work will explore the particularities of Chinese (resource) investments in Africa.

### **3. Chinese Resource Investments in Africa**

There has been much attention in media, political and scientific debates recently on Chinese investments in Africa, particularly in natural resources. Often, there is a negative connotation to media reports, claiming that Chinese companies are locking up natural resources under unfair conditions for the sake of economic development in China or undermining the efforts of the World Bank, IMF and western countries to establish better governance in African States. Most of these claims are based on anecdotal evidence and do not characterize the ensemble of Chinese (resource) investments in Africa. Moreover, Chinese investments stretch towards many more sectors than simply to natural resource exploitation.

The aim of this chapter is to display the engagement of Chinese companies in the African resource sector. First, the attention is directed to China's engagement in Africa in general. It shall be explored in which sectors Chinese investments are occurring, to what extent the Chinese government is involved and how these investments are impacting on African countries. Secondly, a more detailed review of Chinese resource investments in Africa, exploring which countries and commodities these investments have been directed to, will be presented. Thirdly, the chapter draws the attention towards critiques that are specific to Chinese companies in the resource sector, particularly on environmental and social issues, and tries to analyse to which extent these critiques are genuine.

#### **3.1 China's engagement in Africa**

The traces of Sino-African relations date back more than two thousand years. There is proof of important trade relations between Africa and China in the tenth and eleventh century (Power et al. 2012: 29-30). The history of Chinese migration to Africa dates back to the seventeenth century, when mostly slaves and convicts were forced to work in African goldmines (Power et al. 2012: 32). During the 1950s and 1960s China actively supported African independence movements and started to engage in development projects (Van Dijk 2009: 9). One particular project that had caught international attention at its time was the construction of the Tanzam Railway in the 1970s, linking Dar es Salaam in Tanzania and Kapiri Mposhi in Zambia. But only since the 1990s the Chinese leadership developed a strategy to increase investments outside of China to create a bigger export market and to secure access to natural resources (Brautigam 2010: 177). The African continent has been an important target. In the early years of 2000 the Chinese government did formalize its so called 'go global' or 'go out' strategy, encouraging Chinese companies to invest outside of China (Carmody 2013: 66). The 'go global' strategy selects best performing state companies and provides state assistance to open new markets abroad, create global Chinese brands and secure natural resources with long term contracts. By merging with other companies and gaining knowledge in research and technology, Chinese firms would thereby become more efficient and increase their global competitiveness (E.R.A. 2009: 7). The state's support reaches from tax incentives, loans, facilitation of import and export regimes to diplomatic support in African

countries and the provision of investment information (Gu 2009: 580). Another important milestone in Sino-African relations are the Forums on Chinese and African Cooperation (FOCAC) first held in Beijing in 2000. These forums between China and the majority of African states have been held every three years since and represent an important platform for dialogue. The value of Sino-African trade rose from US\$ 8.89 billion in 2000 to US\$ 59.41 billion in 2007 and US\$ 176 billion in 2013 (UN Comtrade database). As of 2013 China represents the most important single country trading partner for Africa (UN Comtrade database). China's trade with Africa mostly follows the patterns of exporting industrial goods towards African countries in exchange for raw natural resources and fossil fuels. In recent years, however, African countries are increasingly exporting intermediate goods (semi-finished goods), such as metals, building materials or food products to China. Since 2007 there are 440 African commodities that are allowed a zero tariff entry to the Chinese market (Brautigam 2009: 95). Figure 1 shows recent trade flows between SSA and China. Chinese investments to Africa still make up only a minority of its global FDI flows. Figure 2 shows Chinese investments in Africa and the share of China's global FDI. The Chinese FDI stock in Africa increased from almost US\$ 900 million to over US\$ 13 billion between 2004 and 2010 (2010 Statistical Bulletin of China's OFDI). The top 10 recipients of Chinese FDI to Africa (totalling 66% of the total Chinese FDI to Africa) are Nigeria, South Africa, Zambia, Ethiopia, Ghana, Tanzania, Congo, Angola, Sudan and Kenya (Shen 2013: 8).

Recent Chinese investments in Africa have been criticized for being predominantly undertaken by state enterprises and concentrated in the oil, gas and mining sectors. But it has to be argued that Chinese investments in Africa have become relatively diversified and are increasingly undertaken by private companies. Figure 3 displays the sectoral distribution of Chinese Investments in Africa. Generally, private investments are making up more than half of total Chinese FDI in Africa and are directed mostly towards the manufacturing and service sectors, whereas state investments are mostly directed towards the construction sector and the extractive sector (Shen 2013: 6-7). A survey of 150

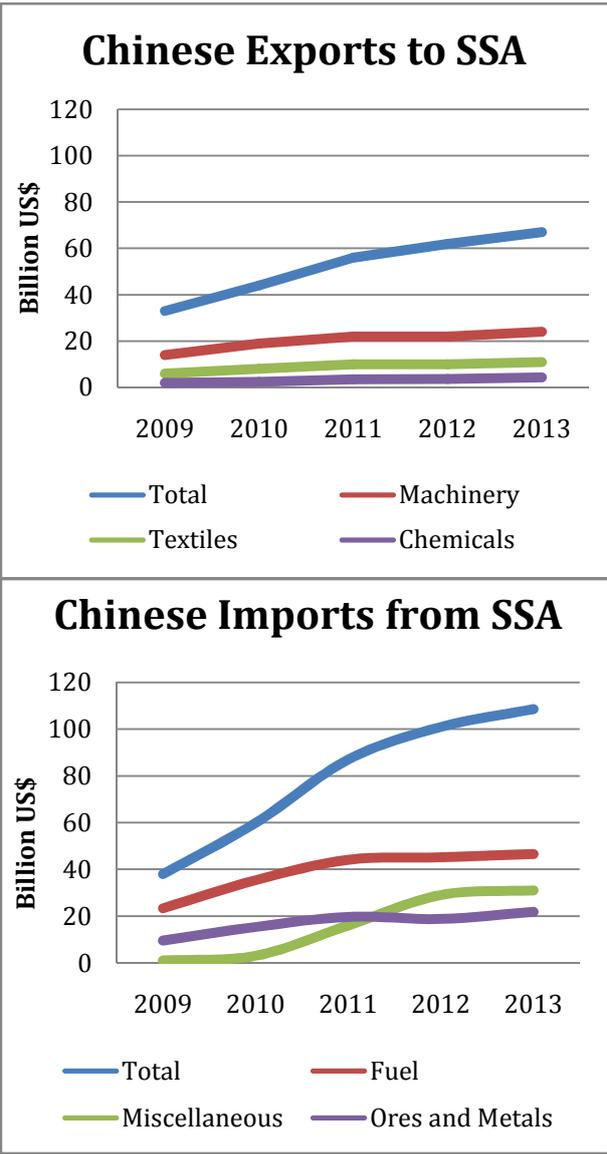
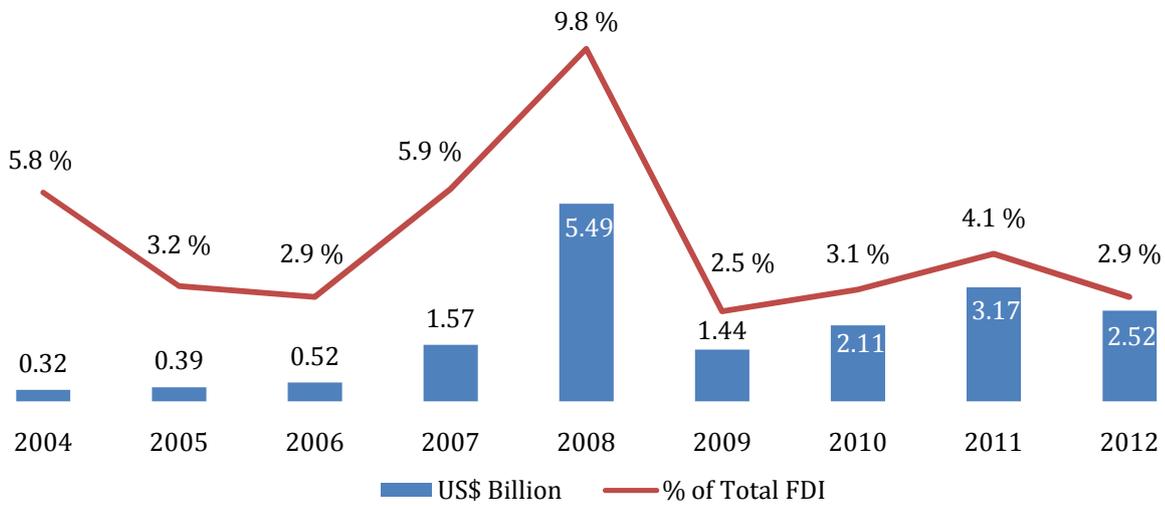


Figure 1 Chinese trade flows with SSA

## Chinese FDI in Africa in US\$ Billions and as share of Worldwide Chinese FDI



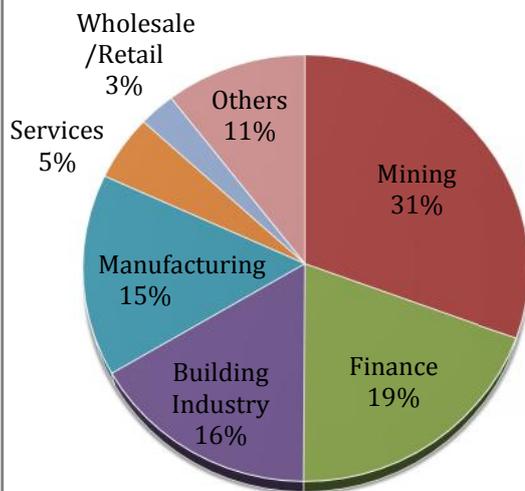
Source: World Resource Institute

**Figure 2 Chinese FDI in Africa**

Chinese companies which were to invest or had already invested in Africa revealed that the manufacturing sector was in fact attracting the most interest, followed by the construction sector and the extractive sector (Broadman 2007: 101). One of the reasons for the increased focus on the manufacturing sector is that the Chinese government is actively seeking to shift processing factories for raw materials towards Africa. Furthermore, Chinese construction companies in Africa are starting to produce building materials on the continent instead of importing those from China (Brautigam 2009: 223-224). The African construction sector records an equally important engagement of Chinese investments. Chinese construction firms are dominating more than 50% of the market (Van Dijk 2009: 15). Claims that infrastructure investments by the Chinese state and development aid are solely undertaken to facilitate the export of raw materials to China seem more anecdotal than reality. As Brautigam, for instance, argues, China is building hospitals, irrigation systems and roads in Angola, whereas oil production is situated offshore (Brautigam 2009: 280).

Other fields of private sector investments are food processing, footwear and textiles, pharmaceuticals, telecommunication and tourism (Gu 2009: 573, Broadman 2007: 12). There are no entirely accurate figures on the number of Chinese companies that have invested in Africa. Even official calculations of Chinese institutions seem to differ. The Chinese ExIm Bank stated that 800 companies were active on the African continent in 2006, whereas the number given by Chinese embassies was over 2000 for the years 2007-2008 (Gu 2009: 573). Other figures again suggest that in 2008 1600 Chinese companies had invested in Africa of which 180 had been subsidized by the Chinese government under the confines of the 'go global' policy (Power et al. 2012: 63).

## Chinese FDI in Africa 2011



Source: China-Africa Economic and Trade Cooperation 2013 White Paper

**Figure 3 Sectoral Distribution of Chinese Investments in Africa**

China's development assistance has also attracted some attention. China has often been accused of using its ODA as tool for its economic and resource strategy that is gaining Chinese companies unfair advantages by, for instance, offering combined packages of resource development contracts and assistance in infrastructure developments. Moreover, Chinese aid assistance is criticized for being 'rogue aid', because of its support of projects in countries with poor human rights records, questionable regimes or poor governance performance. Whether this engagement is actually worsening the political situation in African states has been the subject of numerous scientific debates. Undebatable, however, is that China is pursuing a path different from western states in its foreign development assistance.

This approach has been named the Beijing Consensus, in distinction to the Washington Consensus, which puts the focus on economic liberalization and democratic development (Van Dijk 2009: 22). Ramo (2004) argues that the Beijing Consensus is a much more flexible approach that does not apply standardized solutions. It puts its focus on innovation-led and asymmetric growth, prioritizing the development of economic sectors with a high growth rate instead of concentrating on an overall economic development. In contrast to the World Bank or the IMF it is not solely focused on economic development, but also on the improvement of the quality of life (housing, food security, etc.). Moreover, China's ODA puts its focus on the development of large infrastructure projects in Africa. By 2008 China had financed infrastructure projects in more than 35 African countries (Kelley 2012: 38). These development projects might sometimes be connected to resource investments, but it has been argued that this does not account for the majority of projects. As Brautigam (2009: 2) points out, Chinese Aid has been received by every African country except for Swaziland, which still diplomatically recognizes Taiwan. The Chinese government does, however, not publish official numbers on its ODA (Brautigam 2009:2); data might therefore only be derived through other channels (data provided by receiving governments, involved stakeholders, etc.). China is also engaged militarily in Africa. It provides military assistance to many countries and is also a large supplier of small arms to Africa, particularly to Sudan (Rotberg 2008: 10). It is also increasingly engaged in UN peacekeeping missions in Africa<sup>1</sup>.

<sup>1</sup> See for instance <http://www.theguardian.com/world/2014/dec/23/china-700-combat-troops-south-sudan-africa-battalion-un-peacekeeping>

China's engagement has had positive effects on the economies of African countries. It has been pointed out that Chinese investment in infrastructure and the rising demand for natural resources has led many African states to register high economic growth rates (Cheru 2010:2-3). The increased prices for fuels and minerals are good news for resource exporting countries, raising their income and government spending abilities. Increased Chinese resource investments might come at a time that African countries need FDI more than ever. The 2008 global economic crisis has strongly reduced western investments to Africa, to an extent that acquiring capital for resource exploration projects has become almost impossible (Kelley 2012: 37). As is shown in Figure 2 Chinese investments have been on a record height in 2008 and remained relatively stable in the past years. However, a country that is largely dependent on the export of natural resources might experience lower economic growth in other sectors due to the appreciation of its currency ('Dutch Disease', see chapter 4). This has partially materialized in Zambia where the local currency has appreciated following the increase of copper exports to China, leaving textiles and flower production in greater distress (Asche & Schueller 2008: 67).

China's involvement in infrastructure construction seems also much needed and promising for Africa. It is for instance involved in the construction of ten hydropower projects that will provide 6,000 megawatts and thereby increase the overall hydropower capacity in Sub-Saharan Africa by 30% (Alden & Alves2009: 17). Furthermore, Chinese construction companies are building 1600 km of new railways and refurbishing 1350 km of existing ones (Foster et al. 2009: XIII). Chinese infrastructure investments in Africa have thereby reached a size comparable to those of OECD members (Foster et al. 2009: XII-XVIII). On the other hand, Chinese infrastructure projects often come on the basis of resource based loans which might risk to indebt African countries. In particular, countries that have benefited from debt relief previously might fall into the same pattern of over-borrowing and overspending again (Alden & Alves2009: 18). Moreover, since Chinese companies often rely on Chinese labour, funds spend on infrastructure are partly returning to China (Kelley 2012: 112).

### **3.2 Chinese Investments in Natural Resources in Africa**

Although there has been a long and constant engagement of China in Africa, the growing interest in Africa's natural resources is relatively new. One of the main reasons for Chinese increased investments in Africa's extractive sector is the rising energy demand in China, both for electricity generation and industrial production. In the two decades before the millennium energy demand grew by 4% annually, but since 2001 demand has been growing by 13% each year (E.R.A. 2009: 5).

Consequently, Chinese resource investments in Africa have been to a large extent directed towards oil production projects to fuel the energy demands of its industries. For its electricity generation China is still relying heavily on coal, accounting for more than 70% of its total electricity production (Caceres & Sophal 2012: 58). Almost one quarter of China's oil imports are coming from

Africa, although the Middle East is by far the most important oil supplier (EIA 2014). It is also important to note that the share of China's oil imports from Africa has decreased recently, mainly due to the almost cessation of oil exports from Sudan, South Sudan and Libya (EIA 2014). In 2013, Angola represented by far the most important African oil exporter for China, delivering 14% of China's total oil imports (EIA 2014). Much attention has been directed towards the involvement of Chinese state-owned enterprises in oil investments. These enterprises are profiting from financial support in form of preferential loans and tax concessions as well as political support, for instance by development projects that are initiated around a resource extraction project (Alden & Davies 2010: 86). In Angola the Chinese state-company SINOPEC managed to bid out the Indian state-company ONGC on an oil concession, not least because the Chinese government provided a US\$ 2 billion loan to the Angolan government (Alden & Davies 2010: 92). These companies operate on a long-term perspective whereby profitability might not be considered necessary within the first years (Kragelund & Van Dijk 2009: 91). On the other hand, a survey of Chinese oil companies found that these companies have no obligation to sell their products to China, but instead sell where they get the highest prices. Even Chinese analysts have criticized the lack of cooperation and coordination between Chinese oil companies and the Chinese government, sometimes even being in contradiction with Chinese foreign policies (Downs 2007: 48-51).

The Chinese engagement in oil exploitation has also received the majority of criticism. Inter alia, China is accused of aggravating the situation in Darfur and supporting the Mugabe regime in Zimbabwe (Jiang 2008: 55). On the other hand, it has been argued that by securing resource deals with these countries China tries to avoid direct confrontations with western countries, particularly the USA (Caceres & Sophal 2012: 65). By developing oil operations in countries western oil corporations do not invest in and thus, increasing the global oil production, it even contributes to a more secure global oil supply (Downs 2007: 47). Moreover, the majority of African oil exports still goes towards the OECD countries, with China only having received 7.5% of African fuels in 2013 (UN Comtrade database).

With regard to minerals, China is a more predominant trading partner for Africa. In 2013 China received approximately 50% of all Sub Saharan mineral exports (UN Comtrade database). China is particularly dependent on African imports of cobalt, iron, chromium, copper and manganese (Foster et al. 2009: 37). Chinese resource investments have been directed towards these commodities; copper and cobalt mining in the Congo, manganese and iron ore extraction in Gabon, platinum and ferrochromium in Zimbabwe as well as copper extraction in Zambia (Asche & Schueller 2008: 49). In contrast to Chinese Oil investments, the mining sector also involves the investment of private companies. Some examples shall illustrate Chinese mining investments.

Zambia has so far probably seen the biggest share of Chinese mining investments. One of the first Chinese investments in Africa's mining sector was the acquisition of the Chambishi copper mine in Zambia in 1998 (Alden & Alves 2009: 15). In 2011, a Human Rights Watch report accused the operating CNMC of bad working conditions in its mines (12-18 hour shifts) and insufficient health and safety

measures (Human Rights Watch 2011). In 2005, a private Chinese mining company took over a Manganese mine in Kwabe and was to establish a processing plant<sup>2</sup>. Another case is the coal mining project in Sinazongwe district, run by the private Collum Coal Mine Company, which also gained negative media attention when the Zambian government cancelled mining licences and took over operations due to safety issues in 2013<sup>3</sup>.

In the Democratic Republic of Congo a joint venture owned in majority by the Chinese state-owned Sinohydro Company obtained cobalt and copper concessions in the Katanga Province. This resource deal was supported with an infrastructure loan provided by Chinese state banks worth US\$ 5 billion dollars, to be repaid by the mining joint venture (Alden & Alves 2009: 14). The mining operations have been under great scrutiny due to reports of child labour in the copper mines (Alden & Alves (2009: 18).

Investments have not been limited to the Central African copper belt. In Gabon, for instance, the China National Machinery and Equipment Corporation acquired access to an iron ore extraction project, with the Chinese ExIm Bank providing a US\$ 3 billion investment loan for infrastructure development (Alden & Alves 2009: 14).

Although, resource investment of Chinese state companies have made headlines, it is increasingly private companies that are responsible for the growth of investments and trade in Africa (Gu 2009: 571). The Chinese government is actively supporting small and medium sized enterprises abroad through a development fund, from which over 76,000 enterprises have taken advantage of, mostly in the manufacturing sector. However, the funding is relatively small and most of the private companies operating in Africa are not able to access these loans (Brautigam 2009: 298). It has been argued that there is no Africa-strategy of the Chinese government, but a mix of government actions and private companies' initiatives, and that the capacity for regulation of the different Chinese actors in Africa is also limited (Chuen 2008: 14). The sheer amount and diversity of Chinese small- and medium-sized private enterprises render Chinese state control impossible, especially since they are operating abroad (Power et al. 2012: 125). Private Chinese companies investing in Africa do so for the same reasons as western enterprises do; they are mainly interested in finding new markets to sell their products or to take advantage of more competitive production opportunities (Gu 2009: 577-580). Therefore Chinese private investments in Africa mainly reflect the need of Chinese companies to increase productivity and remain competitive in the global market (Shen 2013: 42).

Chinese operations in the extractive sector have been criticized for a number of reasons. These include negative impacts on the environment, due to supposedly lower environmental standards in Chinese mining operations, and on local communities due to a lack of CSR awareness. It has been argued that Chinese mining activities often start without environmental impact assessments and without

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<sup>2</sup> (<http://www.lusakatimes.com/2010/06/15/chinese-firm-process-manganese-kabwe/>)

<sup>3</sup> (<http://www.bbc.com/news/business-21520478>)

adequate relocation and compensation for nearby households (Power et al. 2012: 207). Moreover, the concept of CSR is still relatively new to Chinese companies operating abroad (Brautigam 2009: 304). It has also been pointed out that Chinese companies violate labour standards of the countries they are operating in. As the examples of Zambia discussed earlier show, poor labour conditions are the case in state-owned as well as private Chinese companies. The lack of transparency in resource-backed loans as well as in the mining contracts between Chinese companies and African governments and the potential harmful effects on governance, particularly corruption, are a further field of concern. Resource-backed loans, as for instance by the Chinese ExIm Bank to Angola, allow countries to evade transparency requirements attached to World Bank or IMF loans (Alden & Alves 2009: 18).

On the other hand, it has been argued that Chinese companies' environmental footprint is much more a problem of weak regulations and legal frameworks concerning the extractive industries sector in the respective states (Power et al. 2012: 210). Furthermore, it is argued that the supposed lack of CSR in Chinese companies in Africa mostly derives from media reports, but is not scientifically verified (Asche&Schueller 2008: 60). There has so far simply not been enough research to prove that Chinese resource companies are having a more adverse effect on the environment than their western counterparts (Power et al. 2012: 219). They are probably generating as much environmental damage and opposition in local communities as western enterprises (Chan Fishel 2007: 148). In regard to the lack of transparency of Chinese resource investments it has to be noted that the Extractive Industries Transparency Initiative (EITI) standard is implemented in an increasing number of resource rich African nations. Countries that have implemented the EITI Standards are frequently reporting on revenues from extractive industries, thereby minimizing the risk for corruption. Chinese companies that are operating in EITI implementing countries also have to disclose their payments<sup>4</sup>. The Democratic Republic of Congo and Zambia, importing trading partners for China in the mineral sector, have joined the EITI standard. However, China's most important oil exporting partners, Angola and Sudan, have so far not joined the initiative<sup>5</sup>. Angola's performance in governance and transparency has, nevertheless, improved in recent years, which demonstrates that Chinese resource backed loans are not automatically related to poor governance (Alden & Alves 2009: 19).

### **3.3 Conclusion**

Chinese relations to Africa have a long history. Migration and Trade have existed for many decades. Chinese enterprises are engaged in a variety of African countries and in many different sectors. Thus, investments in Africa are not solely directed towards the extractive industries sector. Chinese investments in Africa's natural resources are a relatively new phenomenon and have been accompanied by a lot of scrutiny from western media and politicians. There is an important difference between the

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<sup>4</sup> <https://eiti.org/blog/china-and-eiti>

<sup>5</sup> <https://eiti.org/blog/china-and-eiti>

investments of state-owned and private enterprises. China's state-companies are mainly active in oil production projects and have been actively supported by other Chinese state institutions, foremost by the provision of loans and the development of infrastructure projects by the Chinese ExIm Bank and the Chinese Development Bank. These companies also operate in countries with poor human rights and governance records. Private companies are far less supported by the Chinese government and are mostly operating at their own risks. Their investments do not differ to a great extent from investments of western companies and are undertaken for purely market oriented and profit-seeking reasons.

China has an engagement to secure oil supply and some raw commodities vital for the Chinese economy. Official Development assistance and competitive loans might in some cases be offered to facilitate these engagements, but this is not a method unique to the Chinese resource strategy. Moreover, Chinese resource investments are increasing the global production of oil and minerals, which Chinese companies would otherwise have to purchase on the world market. Even state-owned companies sell their products on the world market and are not obliged to sell these back to China. The sheer amount of private companies in Africa renders control by the Chinese government almost impossible. Therefore, it is also questionable to what extent the Chinese government would be able to control resource flows in the future. Chinese companies in the extractive industries clearly have an important negative impact on the environment, however not enough research has been undertaken to prove that their impact is worse than the one of western companies. This in no way should qualify the environmental damages that extractive industries cause. In the end it clearly does not matter who is polluting, particularly not to the people affected by it. Pollution of the extractive industries is a serious threat to local livelihoods (see chapter 4), may it be caused by Chinese or other enterprises. African nations should implement clear environmental and labour regulations and undertake efforts to ensure that companies comply with these regulations. However, what is lacking in African nations as well as in China are civil society movements that pressure international companies. The concessions to CSR in Western resource companies have not least been achieved because of increased awareness and resistance in the civil society against unfair and harmful practices.

Therefore, Chinese resource investments in Africa are representing equal threats and opportunities specific to every investment in extractive industries. It is therefore crucial to focus on national frameworks on environmental, social and transparency standards when determining the impact of resource investments in Africa.



## **4. Extractive Industries and the Poor**

This chapter will explore the impacts of extractive industries on the poor in developing countries. Scientific debates have generated terms such as the 'Resource Curse' or the 'Dutch Disease'. More recently, scholars have focused on the political implication of resource abundance, particularly on the relation of natural resources and (violent) conflicts. This chapter will explore these debates with a particular focus on how economic or political implications of natural resource extraction are impacting on the poor. First, the economic impacts of mining for the poor shall be explored after which the political implications shall be considered. Lastly, this chapter aims at presenting the specific impacts that mining might have on local communities and the environment.

### **4.1 Economic implications of Resource Dependence**

Mining plays an important role in the economies of developing countries. According to the World Bank in 60 developing countries mining is considered as an important part of the economy (WB 2002: 440). Do extractive industries induce poverty or do developing countries attract those industries? Collier argues that the poorest resource dependent countries are trapped in a circle of corruption, weak government structures, conflict and low economic growth (Collier 2007). It seems that in countries with strong institutions natural resources foster human development and economic growth, Norway being an often cited example. Are weak institutions therefore at the bottom of the poor economic performance in resource dependent developing countries? Or does a high dependence on natural resources weaken state institutions?

It is often argued that economic growth is beneficial to the poor, through trickledown effects and the provision of employment (see chapter 2). It is therefore necessary to explore whether the extractive sector contributes to overall growth and to what extent this growth is beneficial to the poor.

#### **4.1.1 Resource dependence and economic development**

There is wide consensus that economic growth implies positive effects for the poor (Slack 2009: 76). However, it has been argued that a country's dependence on commodity exports might eventually harm the general growth of its economy. As Ross puts it:

*"If growth is good for the poor, oil and minerals exports are bad for growth – and hence, bad for the poor (Ross 2001: 9).*

How might an extensive extractive sector be harmful to a country's overall economic growth? One of the first studies that pointed out a negative relation between natural resource abundance and economic growth was undertaken by Sachs and Warner in 1997 (Sachs & Warner 1997). After analyzing the economic performance of 95 developing countries between 1970 and 1990 they found that countries that were dependent on the export of natural resources experienced slower economic growth compared to countries that did not rely on natural resources for their exports. These findings were confirmed by

Auty (1998) who also observed a slower economic growth in resource rich developing countries, after studying a sample of 85 countries in the period of 1970-1993<sup>6</sup>.

There are a number of explanations for this phenomenon. One of the best-known is the so called 'Dutch Disease' theory<sup>7</sup>. The appreciation of the national currency due to a high influx of foreign exchange renders exports uncompetitive and imports inexpensive and is therefore hurting the national economy (Sachs & Warner 2001: 835, Frankel 2010: 19). Recent studies have confirmed the existence of the 'Dutch Disease' (Van der Ploeg 2011: 11). To take effect the influx of foreign exchange has to be substantial. Moreover, the effect might not be limited to the export of natural resources. In fact, any commodity that generates a high influx of foreign exchange might potentially hurt other economic sectors through the same mechanism of currency appreciation. In regard to coal mining this phenomenon might not materialize, since coal is usually used domestically and not exported (Stijns 2001: 35). Moreover, world prices for coal are relatively low and coal exports might therefore not generate an important influx of foreign exchange.

Another explanation for the poor performance of natural resource dependent developing countries is the long term decline in global commodity prices, particularly from the 1970s to the 1990s. Zambia, for instance, has been greatly affected by the decline of copper prices since the mid-1970s, with its GDP falling by over 50% between 1980 and 2000 (Pegg 2003: 11). Others have argued that a decline in commodity prices does not automatically entail lower benefits for the respective countries, since usually production costs tend to decline over time as well (Davis & Tilton 2002: 15). Furthermore, global commodity prices have shown an upward trend in recent years, often attributed to an increased demand by emerging countries (OECD 2008: 22). For Zambia this has translated into economic growth again, mainly due to Chinese engagement in the copper sector and increased copper prices (Carmody 2009: 1199). Recently, however, world commodity prices have been declining once again, which could prove detrimental for some African economies (WB 2014: 4-10). Besides these long term fluctuations of commodity prices, short term volatilities represent a further threat to resource dependent economies and their revenues. This can prove particularly worrisome during recessions, when revenues are needed to stabilize other economic sectors (Davis & Tilton 2005: 236). Overall, commodity prices are far from stable and countries that depend highly on raw commodities will experience important economic fluctuations.

In more recent debates the existence of a 'Natural Resource Curse' has been largely scrutinized. The Sachs & Warner study has for instance been criticized for considering less than half of the world's countries and a period of analysis that coincided with the major debt crisis of developing countries in

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<sup>6</sup> Auty coined the term 'Natural Resource Curse' already in 1993 (Auty, Richard M. 1993. *Sustaining Development in Mineral Economies: The Resource Curse*).

<sup>7</sup> The decline of other economic sectors due to a growing dependence on natural resource exports observed in the Netherlands' natural gas exploitations in the 1980's has given this phenomenon its name.

the 1980s (Davis and Tilton 2002: 36). Other studies even found a positive relation between greater resource abundance and economic growth (Brunnschweiler & Bulte 2008). Stijns (2001) finds both positive and negative effects of resource dependence on economic growth. The World Bank argues that the quality of economic management and institutions is determining whether mining dependent developing countries are able to foster sustainable economic growth; after reviewing 51 developing countries with a minimum share of 6% mining commodities in their exports between 1990 and 1999, a World Bank study did indeed observe a correlation between commodity export dependence and a decline in GDP (Weber-Fahr 2002). However, when analyzed in their regional context about half of natural resource exporting countries in Africa experienced a better economic performance than the regional average. A more recent study of the World Bank further suggest that mineral dependent developing countries might have grown slower during the 1990's, but have grown at an increased pace and faster than non mining countries during the commodity boom of the last decade (McMahon & Moreira 2014: 14). Case studies undertaken by the International Council of Mining and Minerals in Peru, Chile, Tanzania and Ghana revealed a slightly positive impact of mining on overall economic growth (ICMM 2006). Although, the choice of case studies fell on countries being amongst the most successful of mining dependent developing countries (ICMM 2006: 66). Undoubtedly, the ICMM is a proponent of mining induced development (international mining companies such as Rio Tinto or BHP are members of the ICMM). The results of the case studies have therefore to be treated with caution. Interestingly, commodity exports to China seem to have a positive effect on overall economic growth and gain the respective nations higher economic benefits (Meyersson et al. 2008: 4). This might be due to infrastructure projects that often accompany Chinese resource investments, but also due to follow-up investments in other economic sectors (see chapter 3).

Proponents of mining induced development argue that industrial countries have benefited from the creation of economic wealth through large mining sectors in the 19<sup>th</sup> and 20<sup>th</sup> century. It should, however, be questioned whether this historical analogy can be translated to current developing countries. First of all, historical mining regions worldwide are experiencing high poverty rates today (Sampat 2003: 120). Furthermore, developing countries are in very different circumstances. Industrial nations benefited from their mining sectors since they could build on large national markets, protected through higher transportation costs and necessarily nearby processing industries, whereas developing countries have to compete in an increasingly globalised world (Power 2002: 24- 28).

Generally, it cannot be clearly said whether growth in extractive industries in developing countries is having a negative effect on the overall economy per se. Whether a country is successful in turning mining induced growth into sustainable growth in other sectors might depend on other factors as well. The 'Dutch Disease' for instance is curable through a tax regime that reduces taxes on other economic sector at the expense of the extractive sector (OECD 2008: 43). It seems more important that countries that exploit their mineral resources are aware of the risks and possess the political will and

institutions to mitigate these. For coal exploitation the story seems to be different again, since it often plays a minor role in a country's export regime. Furthermore, it has been pointed out that abundant coal resources might provide a country with cheap energy that can in turn fuel economic growth (as for instance in China, India or South Africa) (WB 2002: 443). Developing mining countries that used the majority of their mining production domestically, experienced an almost 7% GDP growth between 1990 and 1999 (Weber-Fahr 2002: 7).

#### **4.1.2 Resource dependence and poverty reduction**

Almost 80% of the least developed countries' poor live in natural resource exporting countries, two thirds of the world's poor that live on less than 2\$ a day live in developing or transitional mining countries (UNCTAD 2002: 125; Weber-Fahr 2002: 1). It has been argued that the level of mineral dependence of a country's export is related to its poverty rates and level of income inequality (Ross 2001: 4, Gylfason & Zoega 2002: 32). The higher the share of mineral dependence of a country, the lower is the share of income for the poorest 20% (Ross 2001: 12). Contrarily, it has been argued that growing mining and energy exports per capita increase income in all income classes, with the strongest positive impact on the bottom income classes (Davis & Cordano 2013). This, however, signifies that the extractive sector needs to grow steadily in order to increase exports and that export growth has to outpace population growth in order to be beneficial to the poorest. There, furthermore, seems to be a negative correlation between mineral dependence and a country's HDI ranking, with a particular negative tendency during the 1990s (Ross 2001: 8). In the least developed mineral exporting countries the share of people living on less than 1\$ a day has increased from 61% in 1981-83 to 80% in 1997-99. In contrast, in the least developed agricultural or manufacturing exporting countries poverty levels have slightly fallen or at least remained stable (UNCTAD 2002: 125). On the other hand, there seems to be no statistical relation between growth in the extractive sector and increased income inequality or poverty rates<sup>8</sup> (Davis & Cordano 2013). Thus, although there seems to be a consensus that poverty rates in resource dependent developing countries are higher, opinions differ on whether a growing mineral sector can induce Inclusive Growth. However, growth in other economic sectors might generate better pro-poor outcomes.

In African countries, economic growth has translated into poverty reduction at a slower pace than in other developing countries. A 1% growth in GDP per capita translates on average into a poverty reduction of 2% in developing countries. In Africa, however, the reduction amounts to only 0.7% (WB 2014: 24). Labour intensive sectors naturally have a bigger impact in reducing poverty, especially those in demand for low skilled labour. It has been argued that agriculture, construction and manufacturing

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<sup>8</sup> After analysing 169 periods of economic growth and decline in 57 developed and developing countries between 1967 and 1997 Davis & Cordano found only a very weak positive relation between growth in the extractive sector and a reduction in income inequality, however too weak to be reliable. When testing for a relation between growth in the extractive sector and poverty rates they found no statistical relation.

have the highest positive impact on poverty reduction (Loayza et al. 2010: 148). Africa has experienced economic growth mainly in the extractive sector, which therefore had a very limited effect on poverty reduction (WB 2014: 29).

What are the reasons for the negative effect of extractive industries on poverty reduction? As argued above a high reliance on the exports of fuels and mining products might lead to the so called 'Dutch Disease'. In the beginning of a mining boom the appreciation of the respective local currency augments the purchasing power of the population and can therefore be regarded as beneficial to the poor, since basic goods become more affordable (OECD 2008: 33). Conversely, the negative impacts on employment in sectors that become uncompetitive represent a threat to the livelihoods of the poor and might outweigh the gains, particularly since the extractive sector is more capital than labour intensive (Pegg 2006: 380). Nigeria, for instance, has a significantly smaller agricultural sector than similar countries without oil production (Ross 2007: 240). Supporters of mining induced development on the other hand claim that growth in the extractive sector has a positive impact on employment. Besides employment opportunities created by mining projects directly, upstream and downstream businesses might provide additional jobs (Weber-Fahr 2002: 13). Large scale mining provides 2-3 million jobs worldwide with, arguably, each job creating between 2-25 jobs in related businesses (Weber-Fahr et al. 2001: 4). The ICMM case studies discussed above also show high absolute employment rates and low percentages of expatriate workers<sup>9</sup>. In comparison to the revenues created by mining projects, however, these numbers seem rather small and efforts directed towards other economic sectors might prove more beneficial (Pegg 2006: 380). In the Democratic Republic of Congo, for instance, mining accounts for 25% of the GDP but only for 7% of employment. Similarly, in Ghana the mining sector is generating 60% of foreign exchange but employs only 5% of the countries workforce (Pegg 2003: 20). Furthermore, modern mining projects demand rather higher skilled workers, which might often be expatriates (Ross 2001: 9) or the better educated, which are seldom the poorest. Thus, the extractive sector itself is providing relatively little employment opportunities suitable for the poor. Moreover, as pointed out in chapter 3, particularly Chinese companies tend to rely more heavily on expatriate workers.

Mining projects might, however, positively impact on local economies. Upstream industries that deliver goods and services to mining projects offer further employment opportunities. Similarly, downstream industries that process raw mined materials might offer revenue creating opportunities for the poor. The World Bank argues, for instance, that for every US\$ mining projects spend on operations, an average of almost three US\$ is generated within the local economy (WB 2002: 446). However, generally there are only few links between mining projects and the local economy, since there is no guarantee that a mining company acquires supplies locally (Bebbington et al. 2008: 890, Pegg 2006:

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<sup>9</sup> Ghana Obuasi gold mine: 5955 employees, 0.3% expatriate workers; Tanzania North Mara gold mine: 498 employees, 17.1% expatriate workers; Peru Antamina copper mine: 1402 employees, 8% expatriate workers; Chile Escondida copper mine: 2810 employees, 1% expatriate workers (ICMM 2006).

382). Since mining companies often rely on expatriate workers, supplies might also be imported from their respective countries of origin. It has also been argued that jobs in the upstream service sector might be of low productivity and deliver only relatively low wages (OECD 2008: 33).

The size of downstream industries depends to a large extent on the mining project, but it has been pointed out that linkages are usually rather weak (Ross 2001, 10). The implementation of processing industries often does not materialize due to tariff barriers from industrialized countries for processed goods (Pegg 2006: 382). Furthermore, low transportation costs have eradicated the need of processing raw materials in the vicinity of mining operations (Power 2002: 27).

Lastly, it has been put forward that technological spill-over effects from the extractive industries will help developing countries to engage in knowledge production. Trainings and education undertaken by mining companies will generate positive spill-over effects on local communities (Weber-Fahr 2002:3, WB 2002: 447). However, investments in other sectors might yield a far higher return (for instance investments in telecommunication technology) (Pegg 2003: 21). Furthermore, the reduction of transportation costs might make the implementation of technology intensive equipment unnecessary, since raw materials are processed elsewhere.

Thus, extractive industries offer little employment opportunities to the poor and investments in other sectors would yield higher benefits for Pro-Poor Growth. The effects of the 'Dutch Disease', if not mitigated, present an additional danger to employment opportunities. Additionally, the volatile character of mining dependent economies can affect the poor in particular. The poor suffer most from economic shocks, since they use the majority of their income to sustain their daily survival (Ross 2001: 12). Governments often engage in heavy spending during boom times and consequently have to undertake budget cuts during recessions, leaving less funds for pro-poor programmes (Ross 2001: 12). On the other hand, incomes from the extractive sector, taxes, rents and foreign exchange earnings, provide governments with additional funds, which can theoretically be spend for pro-poor programmes. These funds might also be used to mitigate the effects of the 'Dutch Disease'. Increasing taxes on the extractive sector would enable tax reduction in other sectors, rendering these more competitive (OECD 2008: 43). There is, however, no guarantee that governments spend their revenues in this manner. Higher revenues might also vanish due to high levels of corruption (see the subsequent section). Furthermore, it has been argued that reduced government capacities in many African states, due to the Structural Adjustment Programmes of the 1980s, have rendered many African nations incapable of developing sound policies that would increase benefits from extractive industries (Bebbington et al. 2008: 909). Tax exemptions are naturally also demanded by mining companies, who might be equipped with better legal advisers than African governments and institutions. As has been pointed out for Ghana, Guinea and Mali, the revenues of the extractive sector have mainly benefited the operating company and the national elite (Akabzaa 2009, Campbell 2009, Belem 2009)

## 4.2 Political implications of Resource Dependence

Resource Dependence of a country might also imply a number of political effects. Governments in resource rich countries tend to be more corrupt (Ross 2001:13). A study by Transparency International reveals that 26 of 32 mineral dependent countries are corrupt or highly corrupt (cited in Sampat 2003: 121). Particularly non-fuel mineral exports of high value promote corruption in low income countries with weak institutions (Petermann et al. 2007: 99, Salai-Martin & Subramiam 2003)<sup>10</sup>. Capture by elites often occurs in remote rural areas, away from the eyes of public observation (OECD 2008: 49), which is where most of the poor live. They are naturally the least able to pay bribes and therefore most affected by corrupt governments. Moreover, control functions in governments that exist to protect mining communities might not work due to corruption (WB 2002: 454). Companies might also bribe government officials to get easier access or favourable terms. In recent years international mining companies and countries have made some efforts to increase transparency and avoid corruption in natural resource extraction projects. The Extractive Industries Transparency Initiative (EITI) has developed a standard by which countries and companies disclose payments and revenues, as well as relevant information on contracts and other elements. Currently, 17 Sub-Saharan African countries have complied with the EITI standards, Kenya so far not being a member. States with abundant natural resources also tend to be less accountable towards their citizens. The reliance on income from the extractive sector might make the collection of taxes unnecessary. Tax payments are, however, important to keep governments accountable towards their citizens (Ross 2001: 14). In developing countries in which institutions are still evolving, income from mining projects might therefore eventually harm institution building efforts. Additionally, taxes provide governments with important information on the performance of economic sectors and the distribution of incomes (Karl 2007: 264). Additionally, mining companies often invest in infrastructure and deliver social services. This further decreases the relations between governments and citizen (WB 2002: 448-451).

It has also been argued that resource rich countries tend to be less democratic. Corruption, for instance, excludes the poor from decision making processes (WB 2002: 448). Particularly oil-producing countries seem to be less democratic, spending high amounts of their budgets on their internal security (Ross 2001: 14). On the other hand, Chinese investments might bypass corruption networks and deliver benefits more efficiently (Gonzalez-Vicente 2011: 71), since resources-for-infrastructure deals bypass cash transfers to governments.

The debate over political implications of natural resource abundance has to a large extent focused on the risks for violent conflicts. Resource-exporting states tend to be more vulnerable towards conflict risks (Bannon & Collier 2002: 7). Especially on the African continent conflicts over natural

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<sup>10</sup> The study of 70 countries between 1998 and 2000 found that non-fuel high value mineral exports fuel corruption in low income countries, but reduce corruption in rich countries (Petermann et al. 2007).

resources seem to be a common occurrence, often manifested in military coups or rebel uprisings. Natural resource abundance might induce conflict through rent seeking behaviour of political elites that create grievances among the population. Moreover, Collier & Hoeffler (2004) argue that rebel movements might originate in the attempt to control the profits of natural resource extractions ('greed'). Thus, rebel groups might see abundant resources as an incentive to start separatist movements. Finally, already existing conflicts might be prolonged due to the financial support resource exploitations offer (ISS 2013: 2-3). Le Billon (2001) argues that resources might in fact be the key driver for violent conflicts and/or sustain existing violent conflicts. Thus, in the end it might become impossible to determine if a violent conflict started because of political or economic reasons.

Ross (2003) suggests that the nature and length of resource related conflicts stands in relation with the properties of natural resources, more precisely their 'lootability, obstructability and legality' (Ross 2003: 47). Thus, minerals that are relatively easily extractable and transportable, as are for instance diamonds, might sustain rebel movements longer. Resources that need infrastructural provisions to be exploited, as for instance oil, are therefore less likely to induce rebel uprisings but might support military coups. It has further been suggested that factors such as skill requirements, the spatial distribution of the resource (point or scattered resources) and the degree of processing needed, play an important role in the relation between natural resources and violent conflict (ISS 2013: 4-6). Thus, minerals that can be extracted and sold with little effort might be more beneficial to rebel groups, particularly if these minerals are widely scattered and therefore difficult to control by governments. Moreover, it is argued here that the worth of the resource plays an important role as well. Natural resources that have only limited market value are less likely to induce violent conflicts, since the financial incentives are lacking.

### **4.3 Local level impacts of extractive industries**

Besides the political and economic effects that mining projects might induce, there are a number of local impacts, such as environmental degradations and the displacement of rural communities, from which the poor are arguably the most affected. Renewable natural resources represent an enormous asset for poor people and are often the only wealth that they possess. Natural resources (renewable and non-renewable) account for 26% of total wealth in low income countries, in comparison to only 2% in industrialized countries (OECD 2008: 17). The destruction of these resources due to mining operations is therefore an obvious threat to the poor. Particularly worrying is that poor people often lack land rights or are unable to afford the purchase of land titles (de Soto 2000). Furthermore, the poor are very dependent on common property natural resources, such as forests, fishing grounds and pasturelands (OECD 2008: 17). Mining projects affect the environment and local communities during all stages of the project. Although, the greatest impacts are occurring during the actual extraction process, exploration, processing and transport also have important consequences and environmental damages might occur

still well after the closure of a mine (Mirande et al. 2003: 7). The continued growth of the mining sector will take operations into more ecological vulnerable territories, which will inter alia increase the pressure on water resources. This might trigger social conflicts not only locally, but also on a wider (rural-urban, national) scale (Bebbington 2008: 908). Hereinafter impacts of mining projects that affect particularly the poor will be discussed.

### ***Livelihoods***

The loss of land to mining projects, that is used for agricultural purposes or pastoralism represents one of the greatest threats to the livelihoods of the local poor and might even jeopardize the food security of affected regions (WB 2002: 443). In densely populated areas it might, furthermore, prove difficult to obtain land that is suitable for displaced people and communities (Downing 2002: 9). Additionally, relocation might move communities to land less suitable for agricultural purposes. But the loss of land is by far the only way that mining projects affect the livelihoods of local communities. They also use natural resources on which the poor depend, for instance local water resources to wash extracted minerals. Modern mines are also very energy intensive operations, thus, the construction of electrical production units might further increase the competition over natural resources, particularly water (Bebbington et al. 2008: 894). Renewable natural resources represent a major asset for the poor, by providing a supplementary income or nutrition during droughts or when food stocks are low (OECD 2008 : 40). If they are destroyed, or if the poor are excluded from their access due to the activities of extractive industries, they often lose their only safety net. Moreover, mining operations not only risk the destruction of natural capital, but might also harm human capital (OECD 2008: 48). When farmers have to give up their occupations due to the pollution or unavailability of water resources or the destruction of soils, their farming knowledge might be lost as well. The costs of these losses are seldom considered during the implementation of mining projects. Furthermore, it has been pointed out that the income security of local communities and economic self sufficiency is put at risk. Regional prices for basic goods are likely to increase, due to the influx of migrant workers for instance, whereas at the same time there might be increased competition over the use of local resources (WB 2002: 444). Compensation payments might therefore already have been spent during resettlement due to increased prices (Downing 2002: 9).

The poor are unlikely to benefit from the little employment that large scale mining projects offer, due to their usually poor skills and education (see above in this chapter). Furthermore, mining projects are threatening local income generating mechanisms, when people lose their access to productive lands or common properties (Downing 2002: 10-11). On the other hand, business opportunities offered to local contractors might represent an opportunity to improve local livelihoods. Training provided by mining companies might help local suppliers to obtain international standards and compete at a broader level (WB 2002: 450). However, there is no guarantee that a mining company

provides these trainings or uses local suppliers to cover its needs. Additionally, the poor often lack the capital needed to start supply businesses. Infrastructure investments that mining companies undertake can also be beneficial for the poor. In fact, since mining projects are often in rural areas a better infrastructure also offers benefits to the poor. They might, for instance, provide better access to markets and thereby increase local incomes.

Whether local communities benefit from business opportunities or improved infrastructure has to be judged from case to case. The threats to local livelihoods, however, exist inevitably and appear to outweigh potential benefits.

### ***Environment***

Poor people are dependent on natural resources and the services provided by ecosystems. The impacts of mining operations on the environment render the poor even more vulnerable (Pegg 2006: 378). It has been pointed out that one third of worldwide mining operations are located in intact ecosystem areas or those of high conservation value and another third is located in stressed watersheds (Miranda et al. 2003: VIII). Large scale resource projects might cause air pollution, soil degradation and a loss of ecosystems and biodiversity (Pegg 2003: 14). Furthermore, depending on the mined resource and the use of chemicals used for ore extractions, groundwater and surface water bodies can be chemically contaminated (Miranda et al. 2003: 7). The recent technological development has made surface mining a much more common procedure, but open pit mines produce 8-10 times more waste (Sampat 2003: 116). To give an example of the sheer amount of waste that open pit mining creates: to extract one ton of gold, 300.000 tons of waste are left behind, which equals 3 tons of waste per golden wedding ring (Sampat 2003: 117). Mining wastes are mostly stocked nearby (so called tailings), and can create a number of additional environmental impacts due to runoffs of toxic substances. One of the known effects is acid drainage, which occurs when excavated rocks contains sulphide minerals that react when exposed to oxygen and water and form sulphuric acid, even long after a mining operation has stopped (Miranda et al. 2003: 7).

### ***Health***

Toxic runoffs of tailings as well as dust and noise of mining operations are a threat particularly to the poor, which lack the means to mitigate negative impacts effectively and might be unable to move away (WB 2002: 443). Particularly vulnerable are women, children and old people. As Ross points out there is a negative relation between the degree of mineral dependence of a country and infant and small children mortality as well as the average life expectancy at birth (Ross 2001:11). Women are particularly affected by health risks because of their caring responsibilities for children, the disabled and the elderly (WB 2002: 451-452). Additionally, stress and trauma caused by displacement also have an impact on the health status of the poor, with infants, children, elderly and expecting mothers being the most vulnerable (Downing 2002: 10). The influx of migrant workers might lead to a raise in the

spread of sexually communicable diseases, such as HIV/AIDS. Prostitution and drug use at mine worker camps might further aggravate this situation (Sampat 2003: 119). It has for instance been pointed out that in mines in South Africa the infection rates of HIV/AIDS can reach 30% and are much higher than the national average (WB 2002: 443). Furthermore, the increase of migration might lead to the dissemination of other communicable diseases, often hygiene related, such as tuberculosis and cholera (Pegg 2003: 14 -15).

### ***Social Disruptions***

Particularly mining induced displacements can have wide ranging social consequences. The loss of land might only represent a minor share of the risks that communities face. The loss of social structures, networks and mutual help relationships due to displacement puts particularly poor people at risk (Downing 2002:3). The loss of houses does not only represent a material loss, but in many communities also a loss of identity. Places often have a symbolic importance for communities and individuals that cannot be replaced by sole compensation payments. It has also been argued that displaced communities might be marginalized in their new locations and might have a lower social and economic status than before (Downing 2002: 11). Furthermore, the occurrence of local conflicts might increase, between communities, amid communities, between individuals, families or clans and between local people and immigrants. Land conflicts within and between communities might for instance increase (WB 2002: 444), particularly in the wake of expected compensation payments. There might also be conflicts over the use of scarce water and land resources that have to be shared with immigrants (WB 2002: 454).

New forms of poverty are likely to occur due to the change of economic and social standards and an increased immigration (Weber-Fahr et al. 2001: 15). In some cases, the change from customary systems to a monetary system might alter existing hierarchies, thus, traditional leaders might lose their authorities (WB 2002: 454). Displacements also are disruptive for education and the functioning of schools. Children might in fact start working during resettlement and never return to school after (Downing 2002: 11). Alcohol abuse, prostitution and child labour are further mining-induced social impacts (Weber-Fahr et al. 2001: 15).

### ***Specific Impacts of Coal Mines***

In addition to the already mentioned mining impacts there are a number of environmental and health impacts specific to coal mining. Environmental impacts include air pollution, soil pollution and water pollution (Epstein et al. 2011:78-80). Arguably, most of the air pollution occurs during combustion of coal for energy generation. However, in the surroundings of open cast coal mines, dust pollution is an often mentioned issue, mainly due to transport trucks, coal crushing and during winds occurring above the mining area<sup>11</sup>. Furthermore, emissions of methane, sulphur dioxides and nitrogen oxides occur close to mining sites (Zhengfu et al. 2010: 218). A further source of air pollution are coal fires that can occur

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<sup>11</sup> <http://www.worldcoal.org>

in underground and open cast coal mining areas. In fact, in some coal mining regions coal fires are burning uncontrolled underground, sometimes for decades. In the Liu Huangou coalfield in China a fire has been burning underground for over 20 years (Stracher & Taylor 2004: 10). A coal fire in Centralia, Pennsylvania, USA has been burning since 1962 and nearly all inhabitants had to be relocated (USGS 2009: 1). Although these fires can sometimes break out due to a naturally cause, coal mining operations facilitate these outbreaks (Stracher & Taylor 2004: 7). Fires might be triggered by mining processes (use of explosives, cutting), by bush fires or other fires that approach open pit mining areas, or through spontaneous combustions (oxygen reactions in coal deposits) (USGS 2009: 1). These fires are omitting large quantities of carbon dioxide, methane, mercury and other toxic substances into the atmosphere (Stracher & Taylor 2004: 7).

Soil pollution mainly occurs due to toxic runoffs and heavy metals from coal mining waste deposits. Acid mine drainage has also a detrimental impact on soils. Land subsidence above underground mines might lead to plant death and reduce crop productivity (Zhengfu et al. 2010: 217). Through condensation processes toxic emissions of coal fires can also pollute local streams and soils (Stracher & Taylor 2004: 7).

Coal Mining has a number of negative impacts on water systems. First of all, coal mining leads to a drop in the groundwater table and to a change of water courses (Zhengfu et al. 2010: 217), which might have effects not only on the environment close to the mine. Particularly open cast mining operations can harm or destroy local aquifers (Munnik 2010:3). Secondly, coal mining pollutes the local water reserves. Mine drainages pollute surface waters; wastes often contain contaminants that leak into water bodies (Zhengfu et al. 2010: 217). Acid mine drainage also has an important negative effect on the quality of local water systems. Lastly, coal mining also uses important water resources. There are no exact figures, but it is estimated that for each ton of coal produced between 3000 and 11000 litres of water are needed<sup>12</sup>. Additionally, power generation from coal needs further water resources for cooling functions.

The environmental impacts also trigger a number of health impacts for the population living close to a coal mine. Poor water quality is, for instance, also causing health problems. Chemicals that are used during processing and washing of coal are known to be cancer causing and linked to lung and heart damage. Fly ash emerging by burning coal contains toxic substances that can cause cancer, birth defects and neurological damages (Epstein et al. 2011: 81). Emissions of coal fires represent a further threat to human health (USGS 2009).

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<sup>12</sup> <http://www.circleofblue.org/waternews/2010/world/infographic-coal-and-water-%E2%80%93-a-resource-mismatch/>

#### **4.4 Conclusion**

There is no consensus within the scientific debate on the economic and political impacts of the extractive sector in developing countries. Generally, impacts depend on the size of the sector, the extent of export dependence, the institutional framework and the minerals mined. With regard to coal it can be argued that mining might have a positive impact on the national economy by delivering cheaper fuels for electricity generation and industries. Since coal is mainly used domestically, countries will not suffer from 'Dutch Disease' effects or volatile commodity prices. The extractive sector has only limited effects on the reduction of poverty. Effects could be maximized if a priority is put on local employment and local procurement of necessary supplies.

In regard to the political implications of natural resource extraction there are negative impacts on corruption and governance in general. Royalties from the extractive sector might render government institutions less accountable towards citizens. Rebel uprisings or military coups are, however, unlikely to occur with regard to coal mining, since the financial incentives are too little. Local conflicts, particularly in regard to resettlement measures might on the other hand be more likely. Thus, on a macro-economic and political level coal mining might have only very limited negative effects.

Lastly, mining triggers important negative impacts on the local level. It might destroy the livelihood bases of the poor without providing adequate employment opportunities. Its impact on the environment and ecosystems hurts the poor the most. Moreover, there are a number of health risks from which poor people suffer most, since they are the least able to move or access medical treatment. Additionally, displacements might cause social disruption, the dispersal of communities and the loss of local safety nets. Coal mining holds particular environmental risks, such as air pollution and contamination of local water resources.

## 5. Extractive Industries in Kenya

### 5.1 Introduction

Kenya's extractive industries sector has so far only played a minor role in its national economy. The share of the mining sector on the total GDP was only 0.7% in 2012 (USGS 2014: 23.1). In recent years, however, there have been a number of new discoveries of oil, gas and mineral resources. Currently, there is a small number of mining projects operating in Kenya. Soda Ash has been extracted at Lake Magadi in south-western Kenya since the beginning of the 20<sup>th</sup> century; operations are currently run by an Indian mining company<sup>13</sup>. Recently, two new mining projects have been going into operation. In Kwale, at the coastal area, approximately 50 km south from the port city Mombasa, a titanium mining and processing operation is in operation since November 2013<sup>14</sup>. In Kilimapesa, south-western Kenya, gold mining has started in the beginning of 2012<sup>15</sup>. Artisanal fluvial gold mining is ongoing in the north-western Pokot region, but deposits appear not to be commercially viable for larger scale operations<sup>16</sup>. Other minor mining operations include local limestone, fluor spar, salt and gemstones exploitations (Kenya Minerals & Mining Policy 2010: 8). Recently, there have been important resource discoveries in various parts of Kenya. Oil and natural gas has been discovered in 2012 in the northern Turkana region. According to the exploring company Tullow Oil estimated reserves amount to 600 million barrels to possibly 1 Billion barrels<sup>17</sup>. So far Kenya has to import all its needed oil resources, amounting to almost 80.000 barrels a day in 2011. This represents one quarter of the total import bill (Ksh 326.9 billion in 2012) (NEP 2014: 10). The discovered oil reserves are comparable with those of Ghana, which is producing almost 98.000 barrels a day (Osoro 2014: 87). Should Kenya be able to exploit its oil resources at the same pace it could not only cover its domestic petroleum needs but also become an oil exporting country in the near future. By February 2014 there were more than 40 exploratory operations for oil and gas on- and offshore (NEP 2014: 17). Moreover, the existence of at least 400 million tonnes of coal deposits in the Mui Basin has been proven in 2006 (Tenge et al. 2013: 333). Two out of four exploitation blocks have so far been licensed. Coal explorations are also carried out in other parts of Kenya, namely in the Taru Basin in the coastal region (NEP 2014: 37). So far, Kenya has to import coal for its cement industry mainly from South Africa, which accounted for more than 210000 tonnes (worth Ksh 2 billion) in 2012 (NEP 2014: 37). In the near future Kenya also aims to use its coal reserves for domestic energy production (Kenya Vision 2030). In Lamu and Kitui County two coal power plants of almost 2000 MW are planned (NEP 2014: 39). Other recent discoveries are those of raw earths in the coastal regions, copper deposits in the Eastern and North Rift regions, as well as gypsum in the northern

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<sup>13</sup>[http://www.tatachemicals.com/magadi/our\\_company/profile.html#.VLOdQNKsVmU](http://www.tatachemicals.com/magadi/our_company/profile.html#.VLOdQNKsVmU)

<sup>14</sup> <http://basetitanium.com/kwale-project/project-overview>

<sup>15</sup> <http://www.goldplat.com/projects/kilimapesa-gold-kenya>

<sup>16</sup> <http://www.standardmedia.co.ke/business/article/2000035871/four-die-in-gold-search-tragedy>

<sup>17</sup><http://www.tullowoil.com/operations/south-east-africa/kenya>

and central areas (Tana river, Garissa, Turkana) and various gemstone deposits in different parts of the country (Kenya Minerals & Mining Policy 2010: 7). Whether these discoveries are economically viable has yet to be determined. The new discoveries also have enhanced hopes within local communities for economic development and an escape out of poverty. In Turkana, Mui and Kwale communities have already demanded higher benefits from mining operations<sup>18</sup>. The Kenyan government has also formulated development targets and policies in link to the resource discoveries. However, the legal, fiscal and institutional framework, needed to regulate the growing extractive sector, still needs to be implemented. Additionally, Kenya adapted a new constitution in 2010, devoted to the decentralization of governance. Legal frameworks and institutions have to be adapted in this regard as well.

Hereinafter the current and intended relevant policies, institutions and legal frameworks for the extractive industries in Kenya will be discussed.

## **5.2 Policies for the extractive sector in Kenya**

### ***Africa Mining Vision***

The Africa Mining Vision was adopted at the 2009 African Union summit. Its aim is to promote economic development and poverty reduction by enhancing the development of Africa's extractive industries. It recognizes several weaknesses in the institutional and legal frameworks of African countries and proposes measures to overcome those, mainly by improving data availability on natural resources and enhancing negotiating capacities of African governments and governance capacities for improved mineral wealth management. The African Vision Action Plan, adopted in 2011, furthermore, aims at ameliorating mining revenues and rents management to increase revenues for African Countries, improving geological information systems for minerals to promote investments and increasing transparency, access to information and public participation. It also seeks to strengthen the position of affected communities by ratifying human rights conventions specifically for the extractive sector and promoting the inclusion and regulation of small scale and artisanal mining activities into national mining frameworks. The Action Plan, furthermore, recognizes the need to create linkages between the extractive sector and the rest of the economy; however, no concrete suggestions are made on how to promote these links.

### ***Kenya Vision 2030***

The Kenya Vision 2030 states that Kenya shall be transformed into a middle income country by 2030. This seems a highly ambitious goal and it is questionable whether this will actually be achievable. The Vision, for instance, aims for a yearly economic growth rate of 10% from 2012. In 2013, however, Kenya's economy grew by only 4.7% (KNBS 2014). One of the key pillars of the Vision is to increase the

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<sup>18</sup>See for instance: <http://www.standardmedia.co.ke/article/2000129807/oil-benefits-yet-to-trickle-to-the-locals-in-turkana> and <http://allafrica.com/stories/201312230666.html>

national power generation. Therefore, it promotes, inter alia, the exploitation of domestic coal resources and construction of coal fired power plants. In the Vision's second medium term plan for 2013-2017 the development of the extractive sector is, furthermore, made a priority. It particularly stipulates the need for the implementation of relevant institutions, the adoption of legal frameworks and the development of adequate infrastructure.

### **5.3 Legal and institutional framework of extractive industries in Kenya**

The institutional and legal framework for the extractive industries in Kenya is currently undergoing important changes. This is due to a number of reasons. First of all, as mentioned above, Kenya has so far had only a minor extractive sector. The discovery of important natural resources makes the implementation of a legal framework necessary. Secondly, Kenya adopted a new constitution in 2010 that is committed to decentralize the government and increase the power of the regional governments. Thereby the institutional framework needs to be adapted as well. And lastly, Kenya's Vision 2030 also sets out a number of development goals for which adaptations in the legal and institutional framework are necessary.

Currently, relevant frameworks for the extractive sector are still awaiting parliamentary approval. These include the new Mining Bill<sup>19</sup>, a revised Petroleum Exploration and Production Bill and the Energy Bill<sup>20</sup>. Additionally, a Natural Resources Benefit Sharing Bill has also been proposed to parliament. In regard to Kenya's coal resources the situation complicates further; it is so far not clearly regulated whether the Ministry of Environment and Minerals, the Ministry for Energy and Petroleum or the Ministry of Mining is the responsible institution. The current legal framework is outdated and neither adapted to the constitutional changes nor does it deliver adequate frameworks for the protection of the environment and affected communities. Even the Ministry of Energy and Petroleum admits that Kenya so far lacks a legal framework for the exploitation of coal (NEP 2014: 38). The current legal framework includes the Kenyan Constitution 2010, the Mining Act Ch. 306 from 1933, with several adoptions (the last in 2013), the Energy Act No. 12 2006, the Environmental Management and Coordination Act 1999 and the Land Act 2012. Laws and regulations that have been adopted before 2010 might contradict the Constitution and are therefore contestable in court.

#### ***The Constitution of Kenya***

In regard to the Extractive Industries the following Articles of the Kenyan Constitution are relevant. Article 42 grants every person the right to live in a clean and healthy environment. Article 60 requires that all land is equitably and sustainably used and managed. Article 69 declares the state responsible to guarantee fair sharing of the benefits that occur through exploitation of natural resources.

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<sup>19</sup> <http://www.bloomberg.com/news/articles/2015-03-23/kenyan-mines-minister-expects-law-to-boost-investment-interest>

<sup>20</sup> <http://www.the-star.co.ke/news/Committee-slams-chirchir-and-wario-bill-delays>

Regulations in regard to the distribution of powers between national and regional governments are made in Article 71 and under Schedule IV of the Constitution: Mining concessions granted from the National government have to be ratified by the Parliament. Furthermore, the National government is responsible for the national economic policy and planning, the protection of the environment and the development of natural resources, including energy policies and water protection. The County governments are on the other hand responsible for the implementation of national resource and environmental policies, the development of County specific energy regulations and the control of air and noise pollution and soil and water conservation. Thus, the constitution gives the National government the authority to develop the exploitation of natural resources. Lastly, article 209(5) determines that taxation by counties shall not interfere with national economic policies. This article could be interpreted as giving taxation authority on mining projects to the national government.

### ***The Mining Act Chapter 306***

The Kenyan Mining Act is an adaption of the Mining Ordinance from 1933 and has been revised and adopted several times (lastly in December 2013). The Act has its origin in Kenya's colonial era and was implemented long before important mineral discoveries had been made. Nevertheless the Act is still valid, since the new Mining Bill (see further down) has still not been adopted by the Kenyan Parliament. Mining concessions granted in Kenya so far are therefore contestable if they interfere with the Kenyan Constitution.

The Mining Act bestows ownership of all non-extracted minerals to the National government (§4) and authorizes the Mines and Geology Department (under the Ministry for Minerals and Petroleum) to change mining policies and implement the Mining Act. The duration of mining leases is fixed at a minimum of 5 years and a maximum of 21 years (§43). The fiscal framework is only little addressed. A concessionaire has to pay Ksh 150 per hectare per year for the land leased to him and 7 cents per kg of Carbon dioxide that is sold. Moreover a 2013 amendment regulates royalties depending on the mineral exploited (coal 8% of gross revenue). Besides, mining companies are subjected to the usual Kenyan corporate tax rates (30% for local companies, 37.5% for foreign companies respectively). Mining companies are furthermore eligible to deduct 40% of their investments from their corporate taxes in the first year and 10% up until the 7<sup>th</sup> year of operations (Odari 2014: 27). A 2012 amendment to the Mining Act is additionally implementing a mandatory national equity participation in mining operations of at least 35% for new mining projects (L.N. 118/2012).

In regard to the protection of the environment the Act establishes only limited restrictions towards mining companies. It explicitly allows storage and disposal of all mining products (§47). It further allows the diversion of water bodies and rivers for mining purposes, only requiring the removal of toxic matters before used waters are channelled back to the environment (§47). In two amendments from 1988 and 1990 the Act excludes National Parks and Reserves, except Tsavo West and Amboseli

National Parks from prospecting and mining activities (L.N. 382/1998 and L.N. 450/ 1990). The conduction of an environmental impact assessment is not explicitly stated as a condition to obtain a mining license. The Environmental Management and Coordination Act from 1999 requires such an assessment. It, however, might be conducted after a mining license has been accorded (see further down).

The Mining Act also has further weaknesses concerning the protection of the rights of local communities. Article 26 asks for 'fair and reasonable compensation' for damages or disturbances that mining operations cause to the owner or rightful occupier of the land. The Act does not require the consultation of local communities before the start of mining operations, neither are transparency measures included; relevant documents are not generally made available for the public. Lastly, the Act is also quiet on measures that would promote local employment and develop the local economy.

#### ***Environmental Management and Coordination Act 1999 Cap. 387***

The Act requires environmental impact assessments for mining projects to be carried out prior to the begin of operations (§58). The Act further prohibits the discharge of toxic matters into waters (§72), disposal of wastes and chemicals or hazardous substances (§87 and §93). The National Environmental Management Authority might in cases of contravention against provisions suspend or cancel environmental impact licences for up to 2 years. Thereby, the Act represents a powerful tool for environmental protection. On the other hand, the act does not hold particular regulations for the extractive sector.

#### ***Land Act 2012***

The Land Act fixes compensation payments for land that is compulsory acquired by the government for development projects (including mining projects) (§111 and §115). The government, furthermore, is obliged to a public hearing of property and compensations issues by the local communities (§112). Moreover, the Land Act establishes the obligation for an implementation of a settlement programme by the government for persons that are displaced due to development projects (§134).

#### ***Institutional framework***

Similar to the legal framework, Kenya's institutions are also undergoing important changes. Currently the following institutions are authorized to regulate the Extractive Industry in Kenya: The National Parliament is responsible for ratifying concession rights that have been attributed by the Ministry of Mining towards mining companies. The Senate, representative of the County governments, is negotiating revenue sharing agreements between Central and County governments. Furthermore, three ministries are responsible for the regulations of the extractive sector. The Ministry of Mining is mandated the development of mining projects and the creation of policies for the extractive sector. The Ministry of Environment, Water and Natural Resources' Mines and Geology Department is similarly

responsible for the design of mining policies. Lastly, the Ministry of Energy and Petroleum also interacts with policies concerning Kenya's oil, gas and coal resources. Further related institutions include the National Land Commission, which is administrating and managing public land in Kenya and is able to buy private and community land for public purposes. Lastly, the National Environment Management Authority (NEMA) is in charge of environmental regulations (Odari 2014: 42-43).

#### **5.4 Prospective legal and institutional framework for the extractive sector in Kenya**

There are a number of laws and institutions proposed that are relevant for the extractive sector in Kenya. The following section explores these frameworks and highlights their differences to the existing ones.

##### ***Mining Bill***

The proposed Mining Bill establishes stricter regulations for the mining sector to the benefit of concerned communities and a better environmental protection. The Bill sets a number of preconditions necessary for the attribution of a mining license. With regard to private land mining licences are only attributable with consent of the owner (§35). Moreover, an environmental impact assessment has to be conducted and local employment and procurement plans have to be formulated (§80). A training and recruitment plan for Kenyan nationals is a further precondition for a mining license (§44). Kenyan citizen have to be preferentially employed and trained in mining operations (§45). Article §48 states, furthermore, that during mining operations preference has to be given to national products, services and enterprises by the mining companies. Moreover, the Bill establishes a number of environmental laws. Those include obligatory reforestation, restoration of land after mining operations completed and the appropriate storage of toxic wastes (§152). Lastly, transparency measures are stipulated, such as the obligatory publishing of mining agreements, production volumes and revenue flows between the government and mining companies (§97). With regard to royalties, the Bill makes no concrete provisions on rates or distribution (§156).

##### ***Energy Bill***

The proposed Energy Bill sets out the framework for revenue sharing between the National and County governments and local communities. It, furthermore, vests the authority on Kenya's coal resources to the Ministry of Energy. The Cabinet Secretary of the Ministry of Minerals and Petroleum would be authorised to sign coal agreements after approval by the National Parliament (§152). Article 156 establishes the sharing of mining revenues as follows: 75% to the National government, 20% to the Counties and 5% to local communities. Similar to the Mining Bill, it is stipulated that coal mining companies shall put a preference on local employment (including training), services and goods (§159).

### ***Natural Resources Benefit Sharing Bill***

The proposed Bill determines the share of natural resource revenues attributed to the National governments, County governments and local communities. Of the total revenues, 20% are appointed towards a wealth fund and the remaining 80% are to be shared between the National and County governments in a 60 to 40 share (§26). The Bill therefore contradicts the Energy Bill, as this would represent a 48% share for the National government and 32% share for the County governments, while the Energy Bill allocates 75% to the National government and 20% to the Country governments, with just 5% for local communities. Under the Natural Resource Benefit Sharing Bill a total of 40% of the County governments 40% share is to be attributed to community projects, determined by a local community benefit sharing forum and County benefit sharing committee (§26 and §31). This would represent 12.8% of total royalties being attributed to local communities. Thus, these would benefit to a larger extent than under the proposed Energy Bill.

### ***Proposed Institutions***

In order to respond to the recent oil, gas and mineral discoveries a number of further institutions have been proposed to be set up: A National Mining Corporation for investments in the mining sector by the National government (Mining Bill §28). A National Coal Advisory Committee is proposed by the Energy Bill that would vest the authority on coal resources to the Ministry for Energy and Petroleum. Furthermore, a Mineral and Metals Commodity Exchange to facilitate the trade with minerals is suggested (Mining Bill 2014, 28). Lastly, a Benefit Sharing Authority that will determine the amount of royalties and fees to be paid by mining companies shall be established (Benefit Sharing Bill §24).

## **5.4 Conclusion**

The current legal framework for the extractive industries in Kenya lacks a number of important regulations, mainly in regard to fiscal benefits, the protection of the environment and the protection of affected communities. Kenya's fiscal regime for the extractive sector attributes windfalls from corporate taxes and royalties to the national government. A benefit sharing mechanism that includes County governments and local communities is so far lacking. The protection of the environment is not adequately addressed in the current mining regulations. Lastly, the Mining Act does not promote linkages with other economic sectors or preferential employment for Kenyan citizen. The proposed Mining Bill sets a number of regulations aiming at protecting the environment and affected communities. The obligation to conduct an environmental impact assessment before mining concessions are attributed is an advancement. On the other hand, it is questionable whether the Kenyan National Environment Management Authority possesses the capacity to access environmental hazards of mining projects. The creation of a department that is specialized on mining related environmental impacts might be advisable. The Mining Bill is also still weak in regard to participation and inclusion of communities during the development process of mining projects. Moreover, it is unclear in which ways

the proposed Energy Bill would interfere with the Mining Bill and the Benefit Sharing Bill. The Energy Bill promises fewer rights and benefits to local communities. Nevertheless, the agreements for the coal mining project in the Mui Basin are based on the current legal and institutional frameworks. These provide only limited provisions for the protection of local communities and the environment.



## 6. Coal Mining in the Mui Basin

### 6.1 Introduction

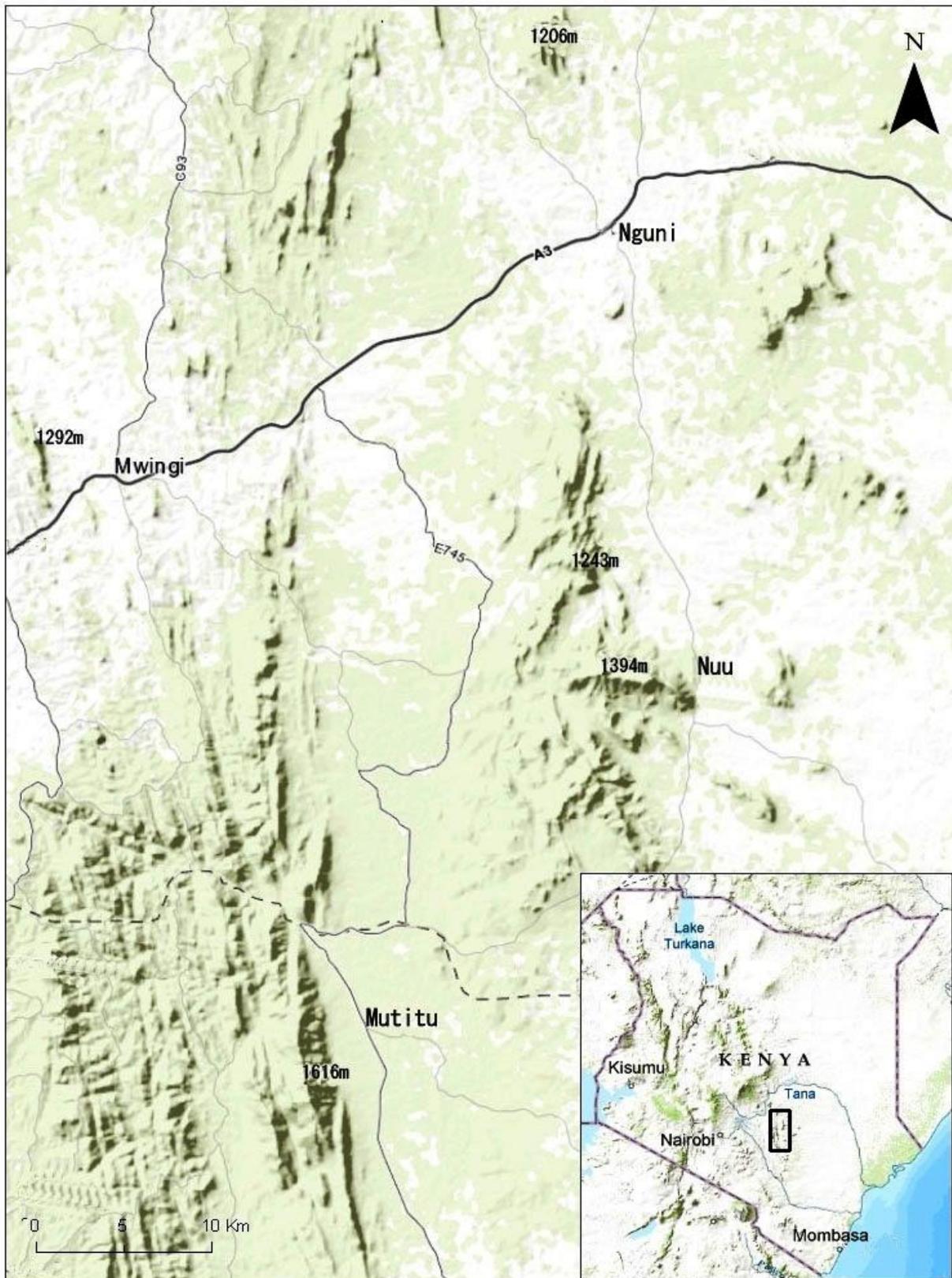
The Mui Basin is situated in Kitui County, south-eastern Kenya, approximately 150 km east of the capital Nairobi and 25 km northeast of the County capital Kitui. It is to be found between latitudes of 00° 53' S and 01° 29' S and longitudes of 38° 09' E and 38° 19' E (Tenge et al. 2013: 330). The Basin is approximately 60 km long and 15 km wide and stretches from south to north. The Basin is bound by the Mutitu Hills to the West and the Nuu Hills to the East and lies at about 700m altitude. Map 1 shows the geographic location of the Mui Basin. The climate in the Basin is semi-arid, with rainfalls only occurring during the rainy season from May to June (with erratic and unreliable rainfall) and November to December. In average the annual rainfall in Kitui County varies between 500mm and 1050mm (Mutie 2012: 14), the long term average being at 550mm in the Mwingi District, where the Mui Basin is situated (NDMA Sep 2014). Because of the geographical situation of the Mui Basin, however, most of the rainfall occurs at the nearby mountain ranges. The region is characterized by agriculture and little urbanisation. 87.3 % of the population in the County derive their livelihoods from farming and livestock keeping and only 5% live in urban environments (Kitui County DP 2014:11,19). In the Mui Basin mainly maize, cowpeas, beans, sorghum, millet and green grams are cultivated. Vegetables and Fruits, requiring irrigation, are only grown on a small scale. The climatic conditions and extremely scarce water resources limit agricultural productivity. Furthermore, people in the Mui Basin base their livelihoods on livestock keeping (mostly goats, and to a smaller extent cattle). Bee keeping and honey production is another economic base of livelihoods in the basin. The production of charcoal has increased over recent years and is having serious impacts on the tree population and water resources.

The population of the Mui basin is almost entirely belonging to the Wakamba, representing the fifth largest ethnic group in Kenya. With 3.9 million people they account for approximately 10% of Kenya's total population (KNBS Census 2009). The Kamba are mainly living in south-central Kenya (Counties of Machakos, Kitui and Makueni) and to some extent in the coastal region. Historically, the Kamba migrated from the Kilimanjaro region towards their actual location. They were engaged in long distance trade between the coast and the highlands of Kenya<sup>21</sup>. Many Kamba people have been christianised, but some of the traditional beliefs are still practised. Traditionally, the Kamba believed in the monotheistic God Ngai, who represents the ultimate creator of life. Spirits of the death are perceived as the intercessors between Ngai and the Kamba. Therefore, holy places and burial grounds play an important role in the identity of the Kamba people. Small offerings during meals and special sacrifices at shrines and caves to please the spirits are made by traditional believers. The Kamba culture also has a wide range of ritual specialists, including sorcerers (Hill 111-115).

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<sup>21</sup><http://www.refworld.org/cgi-bin/texis/vtx/rwmain?page=search&docid=3ae6ad3a0&skip=0&query=kamba>

# The Mui Basin



Martin Neumann, RU Nijmegen (2015)

Map 1 The Mui Basin

The population of the Mui Basin is young. Figures for the County suggest, for instance, that 46.6% of the population is younger than 15 years (Kitui County DP 2014: 9). On average the County's population density is 44 persons per km<sup>2</sup> (Kitui County DP 2014: 11). This also approximately accounts for the Mui Basin. There are around 60 villages and 19,628 people living in the Northern Mui Basin (Kitui County DP 2014, Interview Administration Mathuki 2.5.14).

Poverty data for Kitui County and the Mui Basin are limited. Countrywide 48.2% of the population was living in multidimensional poverty (see chapter 2) in 2009 out of which 15.7% was even living in severe multidimensional poverty. Another 29.1% was living near multidimensional poverty (UNDP 2014b). Conversely, this indicates that less than a quarter of the Kenyan population is living a life without deprivations in regard to education, health and living quality. The share of people living below the 1.25\$ poverty line is extensively higher in Kitui County than at the National average (63.5%



**Figure 4 Water fetching in a dry riverbed in the Mui Basin (photo by author)**

and 43.4% respectively). Figures on multidimensional poverty for the County and District are unfortunately not available. However, existing data suggest that people in Kitui County are suffering from higher poverty than at the national average. Life expectancy and school enrolment rates are slightly elevated in Kitui County compared to the national average; literacy levels are, however, inferior. GDP per capita is at only 58% of the National level (Kitui County DP 2014: 14). Furthermore, some indicators of the multidimensional poverty index are

available (Kitui County DP 2014). In regard to the living standard less than 1% of the population in Kitui's rural areas has access to electricity. Unclean cooking fuels are making up the large majority of the fuels used (88.4% of households are using firewood). Lastly, nearly two thirds of all houses have earth floors. In regard to health services, the County lacks doctors and nurses. There is only one doctor for every 22,005 people and one nurse for every 1,962 people, which represents only 50% of the medical staff recommend by the WHO (Kitui County DP 2014: 38). Access to water in the County is also very limited. There are only two permanent rivers, the Athi and Tana River, which are floating at the County's western and northern borders. On average households have to travel 7km to fetch drinking water and more than 60% of all households spend at least one hour a day to do so. The main sources of water are streams (40% of all households), wells (30%) and boreholes (10%) (Kitui County DP). Figure 5 shows women fetching waters from a well in a dry river bed in the Mui Basin.

## 6.2 Coal mining in the Mui Basin

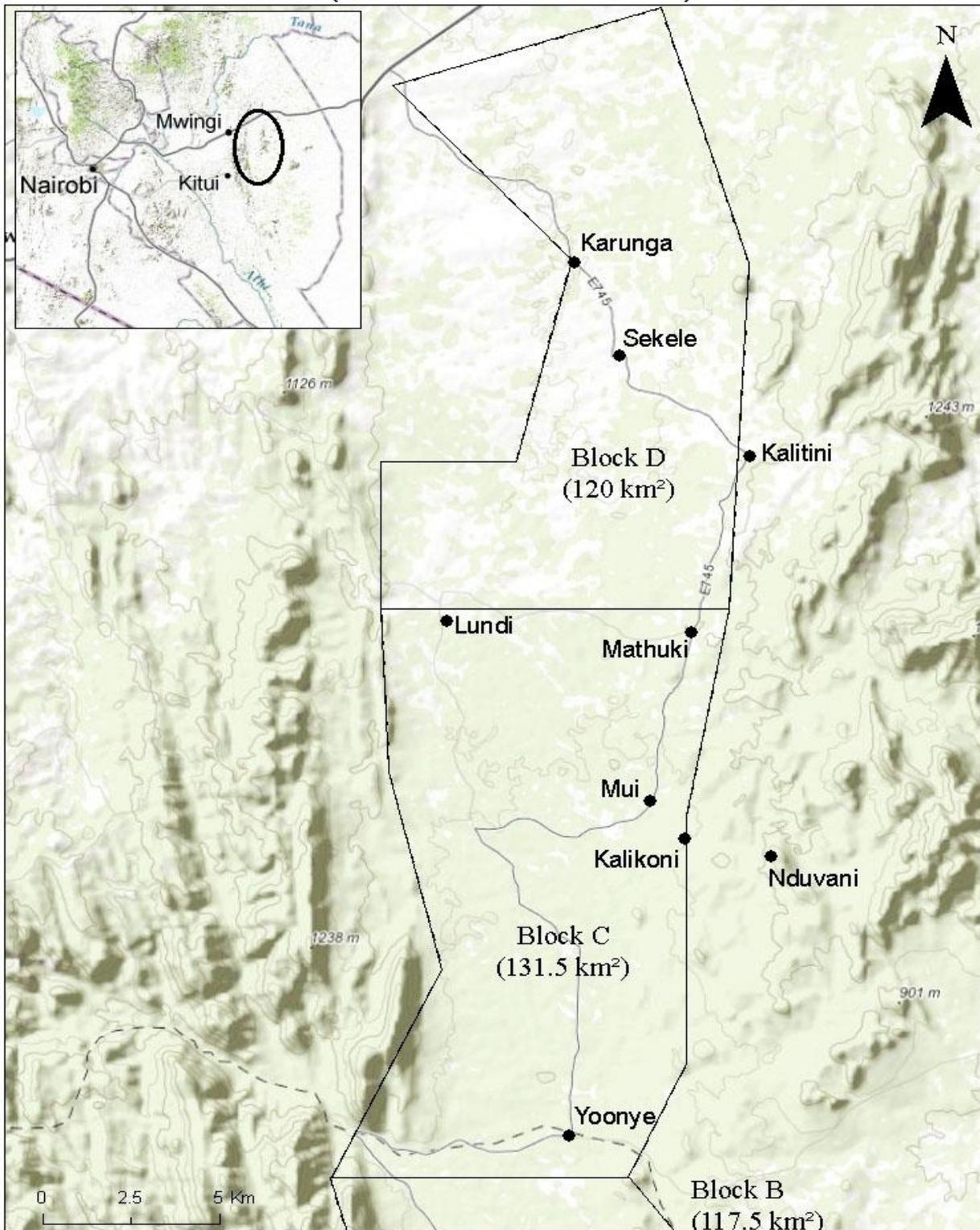


**Figure 5 View of the Mui Basin from the Northwest to the Southeast (photo by author)**

Coal in the Mui Basin was already found in 1950. The Kitui District Annual Report states the discovery of coal at the bottom of an abandoned well in Mui village that was judged suitable for power generation (Kitui District Annual Report 1950). Local legend has it that a monster is living underneath the surface of the Mui Basin, that would appear when people dig too deep. This legend might have been propagated to prevent the local population from

tapping the coal reserves. In 2005 and 2006 sample drillings have been undertaken in the Mui Basin by government geologists. The basin has been subdivided into four exploitation blocks (A – D), stretching from South to North. In Block C the existence of 400 million tonnes has been confirmed (NEP 2014: 37). Figure 6 shows the Basin from the Northwest to the Southeast. The proven reserves are of good quality and suitable both for industrial and domestic purposes (Tenge et al. 2013: 333). The Kenyan government has set out ambitious plans to increase national energy production in its Vision 2030. It projects the demand for energy to grow from approximately 1300 MW today to 5300 MW by 2017 and 18,000 MW by 2030 and aims to install a total capacity of 24,000 MW by 2030 (NEP 2014: 70). Coal is to play an important role in increasing the national power grid by almost 2000 MW, with coal power plants planned in Lamu and Mui (NEP 2014: 72). The coal deposits in Mui have therefore been open to tendering in 2010. Sixteen international mining companies had declared their interest, among them well-known companies as for instance Vale Inc. (Brazil) and BHP Billiton (South Africa). The concessions for the northern blocks C and D have been won by the Chinese mining company Fenxi Mining Industry Ltd. (hereafter Fenxi) and its local partner Great Lakes Corporation in 2011. Map 2 shows the location of the Mui coal exploration blocks C and D. Fenxi is part of the Chinese Jingu Group that is one of the major coal producers in China's northern Shanxi Province. Blocks A and B will be open for tendering in the near future. A concession agreement has been signed on December 23, 2013 between Fenxi, the Ministry of Energy and Petroleum, the Ministry of Environment and Mineral Resources (now the Ministry of Mining) and the Ministry of Finance.

# The Mui Basin - Coal Exploration (Blocks C and D)



Martin Neumann, RU Nijmegen (2015)  
Source: Ministry of Energy & Ministry of Land 2008

Map 2 Mui Basin Coal Exploration Blocks C and D

The County government of Kitui was invited to the signing ceremony, but was not one of the signing parties. Without delays, the project is likely to start at the end of 2015 or the beginning of 2016 (Interview MEPO 9.7.14, Interview Fenxi 10.7.14). But the initial schedule had already been postponed, since Fenxi failed to pay preliminary concession fees until May 2014.

### **6.2.1 The Benefit Sharing Agreement**

The Benefit Sharing Agreement (hereafter BSA) signed between the Kenyan government and Fenxi stipulates commercially viable coal reserves within coal block C to amount to 154.66 million tons. The quality of coal reserves reaches from brown coal to top grade anthracite and layers are between 1m and 16m thick (Interview Prof Eliad Muthu , Geologist at SEKU 8.7.2014). The concession period has been set at 21 years, although the expected mining period is estimated to be approximately 45 years. The annual output is expected to be 1.5 million tonnes. Exact figures on potential coal reserves in block D are yet not available. In regard to the mining methods to be employed, both underground and open pit mining will be carried out, depending on the depth of the coal seams, which are situated between 11m and 350m deep (Interview Fenxi 10.7.14, MEPO 9.7.14).

Fenxi is committed to invest approximately US\$ 377 million in technical equipment, machinery, processing facilities and civil works (BSA 23.12.13). For the operation of coal mining and coal washing facilities, a power plant is to be constructed by Fenxi within the development area (Interview Fenxi 10.7.14). Furthermore, water needed for coal washing and cooling is going to be channelled from Tana River, approximately 45km northwest of the Basin. The BSA does not state how much water is required for mining operations. The author's own calculations suggests that with an annual output of 1.5 million tonnes for block C between 4.5 million and 16.5 million cubic meters of water will be needed annually for processing coal from block C alone<sup>22</sup>. Additionally, the government is planning an international tender for the construction of a coal power plant close to the Mui Basin that is to generate 1000MW (Interview MEPO 9.7.2014). This would further increase water needs. On the other hand, water for washing and cooling might be cleaned and reused which would reduce the overall need.

Potential profits of the mining company are hard to evaluate. This is due to the fact that a world market price for coal as such does not exist, since coal is mostly domestically used, qualities of coal vary widely and transport is relatively costly<sup>23</sup>. Thus, the price at which Fenxi will be able to sell the mined coal towards the coal power plants in Kenya depends mainly on its quality (calorific value). Prices for coal from South Africa were at around US\$ 62 per ton in February 2015 at a relatively low level (WB Pink Sheet 2015). Therefore, based on the expected coal reserves stated in the BSA, Fenxi could expect a turnover of approximately US\$ 93 million a year and US\$ 1.953 billion during the 21 year concession period for block C alone. These are naturally approximate figures that should only give an idea of

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<sup>22</sup> Chapter 4 addressed the water usage of coal mining

<sup>23</sup> See for instance: <http://www.iea.org/newsroomandevents/news/2013/december/the-many-prices-of-coal-decoded.html>

potential profits for the mining company. In regard to mining rents and royalties Fenxi is initially to pay approximately US\$ 1 million for concession fees and a further US\$ 1 million dollar to the MEPO's training fund. Additionally, during the prospecting period the mining company has to pay a fee of 250 Ksh per km<sup>2</sup> per year. Once mining has started the government claims 22.1% and 23.6% for block D and C respectively of gross revenues of the operation. These royalty claims are much higher than those stated in the Mining Act (8%, see chapter 5). According to the calculated approximate turnover this would represent US\$ 22 million per year for block C. The consequent shares for the County and the local communities are not regulated in the BSA. If the proposed Natural Resources Benefit Sharing Bill was to be adopted the County could expect approximately US\$ 7 million and communities approximately US\$ 2.8 million of annual benefits (if the Energy Bill was instead to be adopted annual benefits would be approx. US\$ 4.4 million and US\$ 1.1 million respectively). This implies however, that coal prices remain at the current level. Potential rents and royalties for coal mining operations in block D can so far not be estimated. Additionally, the government might purchase up to 11% of shares in the project within the first 5 years. This represents a much lower share than stated in the Mining Act (at least 35%, see chapter 5).

The BSA establishes the following schedule for the start of mining operations after the signing of the agreement: Within two months environmental and social impact assessments need to be conducted after which exploration operations are due to start. The compensation and resettlement plan has to be submitted within 11 months and resettlement and compensation is to be undertaken between the 12<sup>th</sup> and 16<sup>th</sup> month. Once people have been relocated preoperational drilling and exploration operations are due to start. Three years after the signing of the BSA the processing plant and machinery will be installed in the Basin. Finally, extraction and processing are due to start at the end of the 4<sup>th</sup> year. As noted above, the schedule has already been delayed. In July 2014, seven months behind schedule, Fenxi commissioned a Kenyan company to undertake the environmental impact assessment.

### **6.2.2 Management of social and environmental impacts**

Due to the nature of the soils in the Mui Basin, which consist of mostly loose sediments, people will have to be relocated even where underground mining operations are going to be employed. This is due to the risk of a possible sudden and unexpected lowering of the ground (Interview MEPO 9.7.2014). Mining is going to advance from the Northeast to the Southwest. Consequently, people living in the Northeast would have to relocate first (BSA). The BSA states that Fenxi has to develop a Resettlement Action Plan that provides fair compensation for damages to crops, trees, buildings and the use of the surface area to the respective rightful land owners. The resettlement plan, furthermore, needs the consultation and consent of all affected individuals. Fenxi is obliged to provide housing and restore the livelihoods to the people that need to relocate. Landowners retain the right for agriculture use within the mining development area as long as it does not interfere with mining operations. For compensations to be

properly attributed the demarcation of properties is naturally necessary. So far, however, title deeds have only been attributed in one of the six sub-locations within coal exploration blocks C and D. The MEPO was assuring that relocation is not to start before title deeds have been attributed to everyone (Interview MEPO 9.7.2014).

Compensation payments and resettlement measures amount to US\$ 27.3 million for block C and US\$ 25.3 million for block D according to the BSA. This represents in average approx. US\$ 2,630 for every person or nearly US\$ 20,000 per household<sup>24</sup>. However, compensations are going to be paid based on the size of land and the amount of crops, trees and buildings (BSA). Therefore, payments will vary widely. Fenxi has stated to be waiting for exact figures from the government on how many people will have to be compensated (Interview Fenxi 10.7.14). It is therefore questionable whether the compensation costs stated in the BSA are actually based on people's needs. The BSA also establishes measures to promote the local economy and employment opportunities. The mining company is obliged to train local employees that are to replace the majority of expatriate workers within five years. However, Fenxi did so far not specify how many jobs the project will generate (Interview Fenxi 10.7.14). Furthermore, the mining company is obliged to purchase goods and services preferably within the East African Community if they are comparable in quality and price (BSA). Moreover, the BSA states that housing, water, sanitary facilities, shops and community centres, as well as transport facilities need to be provided by Fenxi within the development area and schools as well as medical facilities within a 30 km radius of the mining area.

The BSA determines the need for the mining company to comply with the Environmental Management and Co-ordination Act 1999 (see Ch. 5). The mining area has to be progressively rehabilitated and restored to its near original status during the 21 years concession period. Soil resources have to be preserved and stored and will be used for progressive rehabilitation of the mining area. Additionally, the BSA foresees an environmental impact assessment and an environmental management plan to be prepared by the mining company to minimise impacts of the mining project on the environment, particularly rivers and water bodies during and after operations.

### **6.2.3 Community reactions**

Local communities have had objections against the mining project from its very beginning. Complaints have, for instance, been made about exploration and drilling operations by government geologists without the permission of landowners. The MEPO had initiated the formation of a Liaison Committee to become the representative of the community in negotiations with the government. The local community, however, did not feel well-represented by the Committee and therefore rejected it. In 2012 a second Liaison Committee was formed by local leaders which seems to be supported by the majority of the community (its members are to a large extent originating from the Mui Basin). The Liaison

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<sup>24</sup> The average size of a household in poverty in Kenya is 7.5 people (WB Poverty Analysis KENYA 2008, 46).

Committee is set to inform and educate the local communities on their rights in regard to relocation and compensation. The Committee objects the reluctant sharing of information by the government and the mining company, particularly in regard to the mode of compensation and the area of relocation (Interview chairman E. Mutua 10.7.14, Interview women representative E. Wambua 10.6.14). Partly in reaction to these complaints, Fenxi invited delegations of government officials and members of the Liaison Committee to Shanxi, China, in order to give an inside to its mining operations in April 2012. The Liaison Committee has noted that the company offered numerous benefits to relocated communities, including the provision of accommodation, training and employment opportunities and the provision of social security including a pension scheme (Report Liaison Committee 2012).

A further concern of the local population is the lack of land titles. In regard to the scheduled 16 months for relocations this risks to jeopardize Human Rights (Interview Centre for Human Rights and Civic Education Mwingi, 19.5.14). After the signing of the BSA in 2013 a Consultative Forum was formed by local community leaders that made a number of demands with regard to the prospective relocation<sup>25</sup>. They required inter alia, the issuance of land title deeds and the resettlement of communities as a unit and to agreed locations. Rumours are occurring within the community that the government is planning to relocate people to Sosoma, approximately 60 km to the east of the Mui Basin. People in Mui consider this area to be unsafe, due to Somali bandits, and unsuitable for agricultural use. The Consultative Forum and Liaison Committee have suggested to be relocated to Kanyono, which is situated approximately 50 km to the west of the Mui Basin. The Forum further demands that land in the mining zone shall be restored and returned to their owners after the end of mining operations. The Forum has also demanded to become shareholders in the mining project as part of the benefit sharing agreement.

In 2012 members of the local community and the Liaison Committee have put a constitutional petition to court<sup>26</sup> that is still ongoing. They claim, inter alia, that the County government and the community should have been involved in the project negotiations and accuse the government to have offended the following constitutional rights during the tendering process:

- Art. 10, the awarding of the tender carried out in secrecy and without public participation
- Art. 35, contravention against the guaranteed freedom of information
- Art. 40, potential breach of the guaranteed private property, since the government would have to compulsory acquire land
- Art. 42, 70, potential breach of the right to a clean and healthy environment
- Art. 43, potential breach of the right to the highest attainable standard of health
- Art. 71, contravention against mandatory parliamentary ratification of mining concessions

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<sup>25</sup> Memorandum of the Mui Coal Mining Consultative Forum addressed to the Governor of Kitui

<sup>26</sup> Constitutional Petition No 12, 2014 consolidated with Constitutional Petition No. 34, 2013 consolidated with Constitutional Petition No. 305, 2012

In 2014 the Liaison Committee demanded to add an addendum to the BSA that would guarantee greater rights and benefits for the local community. This addendum has equally been put to court and demands the following measures to be implemented in the BSA:

- The Resettlement Action Plan has to be negotiated between the government, Fenxi and the community, thus, the community shall be included and not merely be consulted
- Compensation payment shall also be distributed towards pastoralist's amenities and for cash and food crops
- 30% of the compensation payment shall be used to buy equity shares for the community in the mining project
- 1% of the revenue created shall be set aside for the development of a post mining economy
- Of the agreed 11% option shares 3% shall be attributed to the County and the community in each case
- Furthermore, employment priority shall be given to local and national workers

## **6.4 Conclusion**

The analysis of the legal and institutional framework for the extractive industries in Kenya conducted in chapter 5 concluded that Kenya is ill prepared to accommodate mining projects and to manage the potential social and environmental impacts. The Benefit Sharing Agreement contains, however, a number of instruments and regulations that go beyond the current legal framework and offer better protection and benefits to local communities. Particularly the agreed measures to improve infrastructure, health provision and education are a step in the right direction. With regard to compensation payments and relocation measures for affected communities, plans have so far not been formulated by Fenxi. It is therefore questionable whether the stated expenditures in the BSA will be adequate. Moreover, the local communities have so far neither been consulted about the project itself nor about relocation and compensation measures that will affect their everyday life. The additional demands made by community leaders show that local people are aware of the potential social impacts of the project, even though information has been shared only reluctantly by the government and the mining company. These requests would, if accepted, offer better benefits to the community. The attribution of shares in the project to local communities has so far not been proposed by the government, but offers a path to benefit from the project over the course of time. So far, however, an evaluation of the social impacts can only relate to the measures agreed on in the BSA. These are on the one hand not far reaching enough and on the other hand it is questionable how the implementation by the mining company shall be controlled. Additionally, the lack of title deeds implicates that compensation payments cannot be attributed correctly.

In regard to the potential environmental impacts the BSA makes far less provisions. As argued in the previous chapter, the regulations of the Environmental Management and Coordination Act are not far reaching enough for the extractives industries. Additionally, it is questionable whether the NEMA possesses the necessary skills to evaluate the environmental impact assessment that is to be provided by Fenxi. The communities of the Mui Basin do not seem to be aware of all the potential negative

environmental impacts of coal mining, particularly in regard to local water resources (see chapter 4). The necessary provision of water from the Tana River for the MCMP will have negative impacts on water resources nationwide. Lastly, both within the government and the community there seems to be a belief that the mining area can be completely restored after the end of the project, which is a dangerous fallacy.



## 7. Methodology

During a fieldwork stage from April to July 2014, 75 household surveys of qualitative as well as quantitative nature were conducted within the Mui Basin. Additionally, in-depth interviews were conducted with relevant stakeholders, such as the Ministry of Energy, Fenxi Mining, the Liaison Committee and a local Human Rights NGO. Since mining operations had not yet started during the author's field stage the survey was of a highly explorative character. All surveys were conducted by the author with the help of a local research assistant, who contacted and approached respondents and also translated the questionnaire if necessary. The aim of the survey was to assess opinions and perceptions of the local population in regard to the MCMP. Results were tested for correlations regarding gender, age, education and relative wealth of respondents. Thereby, the objective was to explore whether and to what extent the respective groups had an understanding of the potential benefits and negative impacts of coal mining in their region. A focus was put on a relatively equal distribution of gender, age and educational status of respondents. Moreover, a spatial concentration of the homesteads of respondents was avoided (respondents came from 41 different villages).

Interviews consisted of two main parts and were conducted in one to two hours' time. The first part embraced a qualitative survey on livelihoods and conflicts over natural resource developed by the Cocoon Initiative. The objective is to assess the relation of conflict and cooperation in the use of natural resources in African arid and semi-arid regions. Surveys have been conducted over the past years in different regions in Kenya. The second part consisted of a questionnaire directed at respondent's opinions concerning the MCMP and has been developed by the author<sup>27</sup>. The basis of the questionnaire was developed beforehand and discussed with a senior professor from SEKU University in Kitui. Questionnaires had also been adjusted during the first weeks of the fieldwork before the start of the survey.

The questionnaire includes both qualitative and quantitative questions. The qualitative questions were aimed to give respondents an opportunity to phrase their views in regard to coal mining relatively freely. During the quantitative part respondents were asked to phrase their opinions on a likert scale for latter statistical analysis. Firstly, respondents were asked to formulate their agreement or disagreement on a particular statement. Therefore, they were asked to rate their opinion on a five-step scale reaching from strong disagreement to strong agreement (-/-/0/+/>++). Results were converted into values from -2 (strongest disagreement) to 2 (strongest agreement). Secondly, they were asked to evaluate occurring conflicts and the potential for new conflicts to occur in regard to the mining project. Thereby, they were asked to indicate the type of conflicts (about land ownership, agricultural land, pastoral land, water, compensations or other) and between which parties the conflict occurred or would occur (between individuals, households/families, tribes, people and the government, people and

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<sup>27</sup> See appendix A

the mining company). The answering scale included three options (0/+ /++). Results were converted into values between 0 (no conflicts) to 2 (many conflicts). Lastly, respondents were asked to evaluate potential impacts of the project in regard to gender and age groups (young or old). Thereby, respondents were presented with possible positive impacts (infrastructure improvements, compensations, employment opportunities, business opportunities, improved access to electricity and other impacts they conceived) and possible negative impacts (environmental degradation, land loss, loss of traditional livelihoods, loss of cultural spaces and other impacts they conceived). The answering scale included three options (0/+ /++). Results were converted into values from 0 (no impact) to 2 (strongest impact). Results and correlations were analysed with SPSS.

It has to be noted that since mining operations have not yet started in the area, the interviews were of an explorative character, particularly in regard to potential impacts and conflicts. The lack of information about the project at the community level has been unforeseeable during the preparation of the questionnaires. Initially, the qualitative and open questions were meant to make respondents comfortable in a rather unusual situation. However, during the interviews respondents were at times unable or had great difficulties to phrase their opinions and seemed to feel more comfortable with the qualitative questions. Since the focus of the analysis has been on the quantitative results, this circumstance did not impact negatively on the analysis. However, qualitative responses could have given a better insight on people's perceptions. Moreover, there have at times been minor misunderstandings that occurred due to the necessity of translation from English into Kikamba.

Respondents from various gender, age and educational backgrounds have been interviewed. The distribution in regard to these backgrounds is relatively balanced (see chapter 8). There is, however, one group that has been underrepresented in the survey – young people underneath the age of 25. It would clearly have been worthwhile to survey opinions of the youth, since they will have to live with the impacts and consequences of coal mining. However, interviews focused on the heads of households, and these are seldom from the youngest generation. Respondents also had higher education than on average in the County (see chapter 8). This is certainly due to the fact that the research assistant is a retired secondary school teacher. Moreover, as will be explored in the subsequent chapter, the households interviewed were relatively wealthier than the average households in Kitui County. Besides these minor limitations and the restricted number of interviews the survey did cover opinions from people of very different backgrounds and can therefore count as a valid indicator of Mui Basin inhabitants' perceptions of the MCMP. The results of the qualitative questionnaires have been tested for correlations to gender, age, education and the relative wealth status of respondents. The indicators for gender, age and education were collected within the surveys. In regard to age, four groups were formed based on the distribution of respondents. As discussed above, the survey only covered a small number of young people. Therefore, the youngest age group includes 18- to 34- year-old respondents. The three remaining age groups reach from 35 to 49 years, 50 to 64 years and older than 65 years. In regard to the

education of respondents five groups have been defined (without education, primary school attendance, secondary school attendance, college and university degrees). Finally, in order to relate people's perceptions in regard to their relative wealth status an index based on the wealth status of respondents was developed (see table 1). This had been necessary, since poverty measurements discussed in chapter 2 were not practical for the purpose of this survey. Making use of the national poverty line to rank the respondents' wealth status would have required the collection of data on household incomes or consumptions, which besides from being difficult to access, respondents might have been reluctant to expose. More importantly though, Kitui County being one of the poorest in Kenya, it is likely that most of the respondents would have fallen underneath the poverty line, giving no further indication on the wealth status of respondents. As discussed in chapter 2, the monetary approach also ignores other important characteristics of poverty. For these reasons an index based on the MPI appears more meaningful. Using the MPI itself has not been possible, since some of the data required would have been difficult to access (for instance child mortality and nutritional status). The developed index reaches from 0 to 10 and is based on 7 indicators. Table 1 gives an overview of the indicators and their weighting. Most of the people interviewed were dependent on farming and livestock keeping for their livelihoods. The possession of land therefore accounts for 30% of the index. Respondents were attributed a value between 0 and 3, depending on the size of their land. In regard to livestock (representing 20% of the index) respondents were attributed a value between 0 and 2, depending on the amount of cattle a household possessed. The remaining five indicators were valued equally (10%) and refer to the standard of living. Respondents were attributed the value 0 (lacking) or 1 (possessing). Indicators are: the possession of a brick house, access to electricity, holding a bank account, owning a TV

and possessing at least one means of transport (car, motorbike, bike or donkey cart). Based on the household's wealth index three groups have been created in order to make correlations meaningful; the poorest included households obtaining between 0 and 3 index points, the middle wealth group included those with index points between 4 and 7, and the wealthiest was defined between 8 and 10.

Relative Wealth Index Mui Basin		
		Index Points
Size of land	< 2 acres	0
	2 - 5 acres	1
	> 5 - 10 acres	2
	> 10 acres	3
Number of cattle	0	0
	1 - 5	1
	> 5	2
Standard of living	Brick house	0-1
	Electricity	0-1
	TV	0-1
	Bank account	0-1
	Transport means	0-1
max		10

**Table 1** Composition of the Relative Wealth Index Mui Basin



## 8. Analysis of the Mui Household Survey

This chapter will discuss the data collected during the author’s fieldwork in the Mui Basin. Firstly, a brief characterization of the respondents foremost of social and economic factors shall be given. Secondly, the results of the survey will be presented. The answers provided will be correlated to gender, age, education and wealth of the respondents. The groups that appear most vulnerable in the eyes of the local population shall be identified.

### 8.1 Characterization of respondents

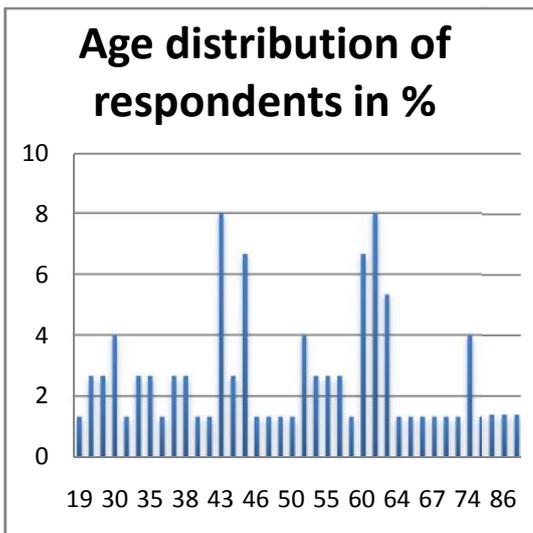


Figure 6 Age distribution of respondents

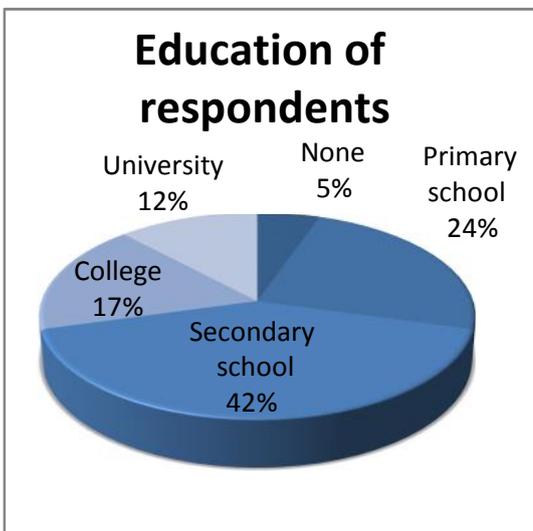


Figure 7 Education of respondents

The gender of interviewees is relatively equally distributed (33 women and 42 men). The survey embraced people from all ages, reaching from 19 to 92 years. However, since interviews were undertaken with the heads of households the mean age is relatively elevated at 52 years. The majority of people interviewed were between 43 and 63 years old. Figure 6 shows the age distribution of respondents. The households interviewed had an average size of 6.4 members. The educational status of respondents (thus, the heads of households) was also very mixed. Only four respondents had no education, 18 had at least attended primary school. Those with a secondary degree represented the biggest group of respondents (42%). One quarter of the respondents had obtained a college or university diploma. Figure 7 shows the distribution of education of respondents. These distributions differ widely from the average within the District (without education 18.5%, primary education 61.3%, secondary education 10.2%, college degree 3.3% and university degree 0.5% (KNBS Census 2009)).

The main occupations of households interviewed were farming and livestock keeping. Furthermore, many households derived their income from household members that were employed (mainly as teachers). Shop keeping represents the livelihood basis of 7% of households interviewed. Figure 8 shows the main occupations of respondents households.

Farmers mainly planted maize, peas and green grams. Agriculture mostly depends on rainfall, since local water resources, to irrigate the plots, are scarce. On average, each household possessed 7 acres of land; however, land distribution between respondents was very unequal. The majority of respondents (60%) had only up to 5 acres of land. Figure 9 shows the land distribution of respondents. Additionally, 40% of respondents, mostly those possessing more than 5 acres, had land that was lying idle, either retained for future use, to improve fertility or due to a lack of funds to purchase seeds. Of those owning 5 to 10 acres almost 75% had on average 5 acres of idle land. Of those possessing more than 10 acres, 75% had on average 14 acres of land idle. Most households also owned livestock; however, the distribution was unequal as well. 10% of households interviewed did not possess goats and 25% did not possess any cattle. Two thirds of the households interviewed owned at least one donkey, which is important for transport and water fetching. Water resources are scarce in the Mui Basin. The main sources of water of households interviewed were shallow wells (41%) and rivers (27%). Another 20% had access to water from boreholes. 37% responded that there was not enough water for the households needs and 57% stated that they lack enough water for agriculture and livestock. The living standards of households interviewed was relatively elevated in comparison to the overall standard in Kitui County. This could be linked to rather higher education and percentages of households that derive their income or part of their incomes outside of farming or livestock keeping. Almost half of the households had, for instance, access to electricity (including solar energy) compared to an average of less than 1% in rural areas in Kitui (see chapter 6).



Figure 8 Main household occupations

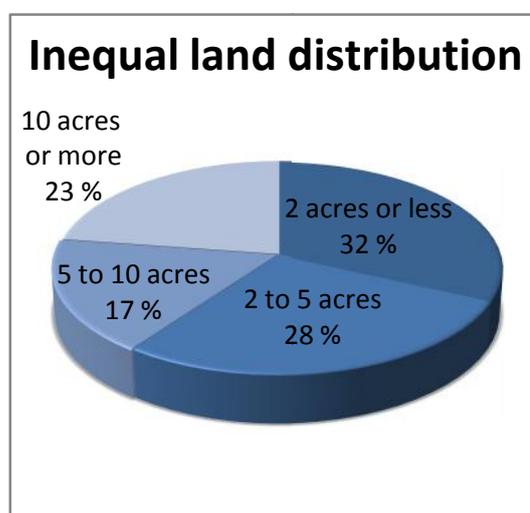


Figure 9 Land distribution of respondents



Figure 10 Living standard indicators of respondents

### Relative Wealth Index of respondents

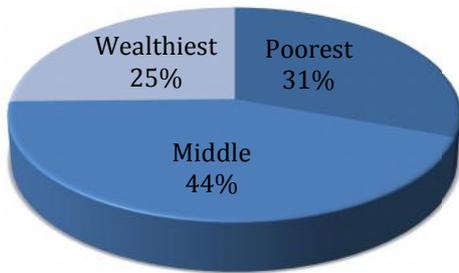


Figure 11 Distribution of wealth of respondents

### Major problem the household is facing

Responses in %

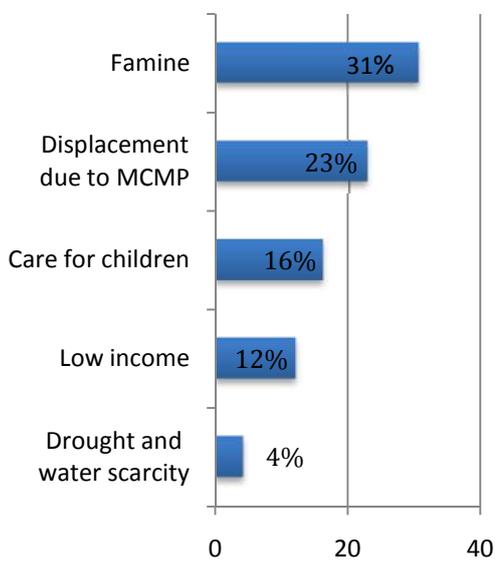


Figure 12 Major problem respondents households are facing

Market places in the Mui Basin are often connected to the electrical grid, whereas homesteads are seldom connected. This circumstance may to some extent explain the relatively high coverage of electricity. Other indicators also suggest a comparatively higher living standard; more than 80% of respondents lived in a brick house and over 40% owned a television. About a quarter of households received remittances, mostly between Ksh 1000 and 6000 monthly. 13% of households were in possession of a car, 30% of a motorbike and 36% of a donkey cart. Figure 10 shows some indicators of the respondents living standard. With regard to the developed Wealth Index (see chapter 7), distributions are shown in figure 11. The major concerns of respondents for the near future were food insecurity and resettlement due to the coal mining project. Figure 12 shows the major concerns of respondents in regard to the future. Concerning conflicts over the use of natural resources, respondents only indicated few and minor conflicts. 43% of respondents indicated that conflicts over the use of water existed, particularly during periods of drought. Moreover, a number of respondents stated that conflicts over the use of water, land and forest had increased in recent years and expected those conflicts to further increase. Around 40% of respondents indicated that water conflicts had increased and were likely to increase further. One quarter of respondents said that land conflicts had increased and more than a third expected a further increase. Respondents mainly argued that conflicts had increased due to population growth. The majority of respondents did, however, not mention any major conflicts on the use of natural resources in the region. To sum up, in comparison to the overall living

standard in Kitui County respondents were relatively wealthier. However, the households interviewed were fairly diversified in regard to gender, education, age and occupations. Responses in regard to the MCMP might therefore be considered as representative for the inhabitants of the Mui Basin.

## 8.2 Responses to the MCMP

As discussed in the previous chapter, the questionnaire in regard to the coal mining project was divided into a qualitative and a quantitative section. The first section was meant to open up the dialogue with respondents and to give them the opportunity to express their opinions towards the MCMP before turning towards the more technical part of the survey. The quantitative section represents the major part of the questionnaire and does in turn consist of two parts. In the first part people were asked about their opinion towards the mining project. In the second part respondents were asked to evaluate which gender and age groups would be most impacted by the project. Before analysing the quantitative results and correlations with gender, age, education and wealth levels, the qualitative responses will be discussed briefly.

A striking finding was the almost complete lack of information on the coal project within the local community. Although, respondents were generally aware of the project, none of them had received specific information from the government or the mining company. Only a few interviewees had limited knowledge of the project which they indicated derived from local NGOs, the Catholic Diocese or the Liaison Committee. Therefore respondents often had difficulties or were even unable to formulate their expectations or fears in regard to the project and its impacts. Generally, responses show a mixed picture of opinions. Some people expected to become rich through the compensation payments for their land. Others feared that they would be relocated to less fertile and smaller lands that would leave them in greater poverty after all. Generally, respondents were very concerned about resettlement and mistrusted the government's ability to deliver fair compensations and ensure adequate relocation to everyone. A few people even refused to move whatever high compensation payments might be. Many respondents explicitly pointed out that they feared the loss of their social and cultural ties due to the breakup of their community and a worker's immigration towards the region.

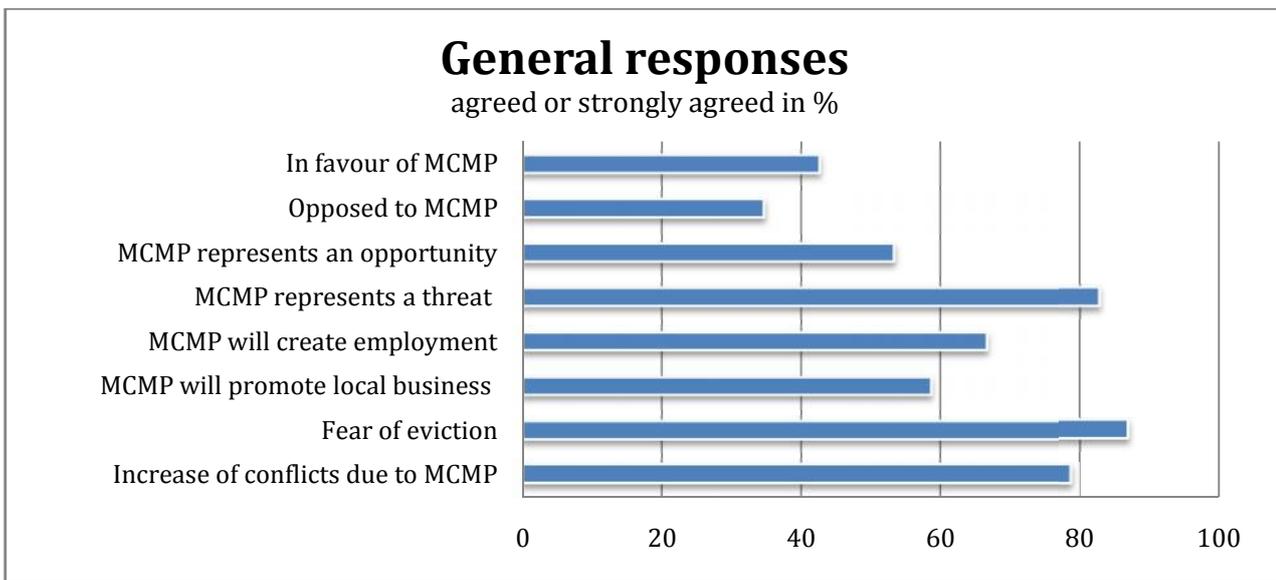
However, several respondents also believed that mining would help to develop the region, create employment and promote local businesses. 45% of respondents expected their livelihoods to change in spite of the mining project. Some saw improvements in their livelihoods and had plans to use compensation payments to build up shops and other enterprises, whereas others feared a lack of land and an increase in living costs. But almost 40% of the respondents could not say whether they expected the economic situation for their households to be better or worse after mining operations would start. One third responded that the situation would worsen and only a quarter believed in an improvement.

When asked about the environmental impacts of the mining project, interviewees had very few concrete ideas. This is for once due to the lack of information on the mining project itself. Moreover, the concept of environment might not mean the same as it does in industrialized countries. To give an example, respondents often mentioned the destruction of churches and schools as an environmental impact. The need for translation might have caused further confusion. Apart from these difficulties in communication, people often drew a picture of a landscape deserted and hostile due to mining.

Moreover, many respondents expected higher air pollution due to dust and gas emissions and a consequent negative impact on health. A few respondents, however, evaluated benefits from the project higher than repercussions of environmental impacts. Only a handful of respondents mentioned negative impacts on water quality and water resources in the region.

Thus, generally people had very mixed ideas about the benefits and negative impacts of the MCMP, but were to a large extent left alone in imagining the outcomes, since only little information about the project was provided to them. In the subsequent section the qualitative responses will be analysed and tested for correlations in regard to gender, age, education and relative wealth.

### 8.2.1 General responses



**Figure 13 Responses to the MCMP**

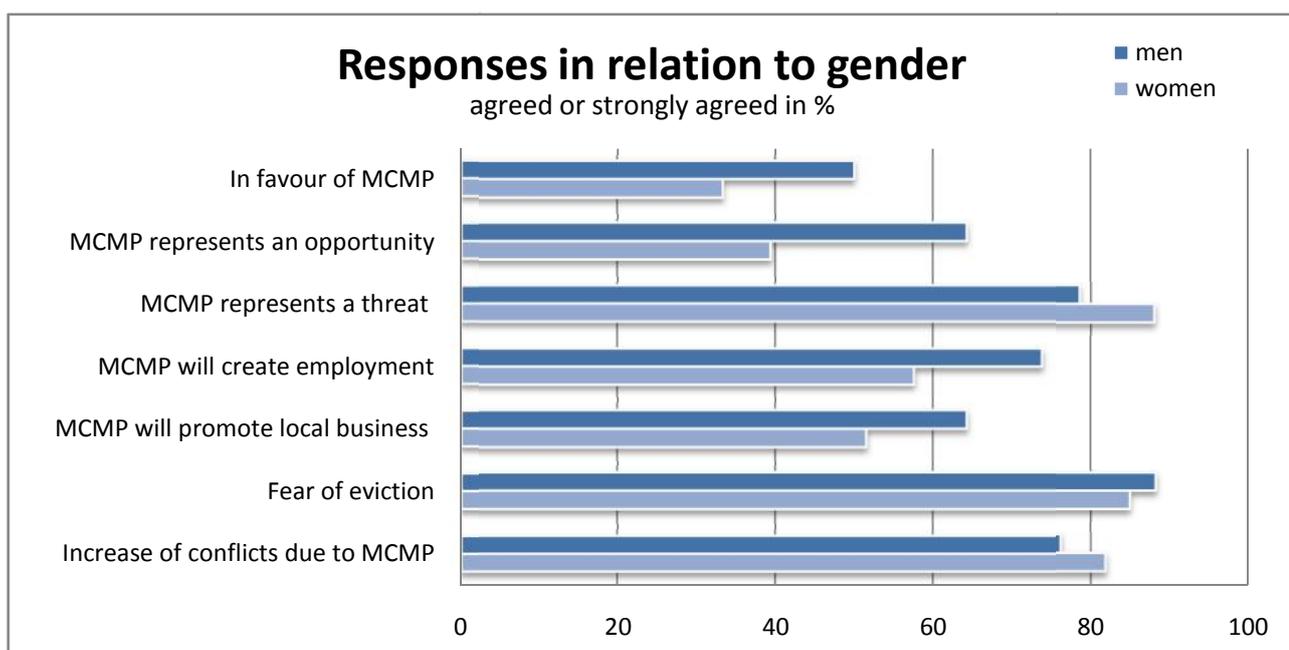
The analysis of the 75 household surveys showed that a slight majority of respondents was in favour of the MCMP (32 respondents were in favour and 26 opposed to MCMP). However, the majority of respondents perceived the project more as a threat than an opportunity. Responses averaged at 1.05 and 0.19. Moreover, people’s expectations towards employment and business opportunities for the project were generally rather low (average of 0.56 and 0.45 respectively). Answers also showed that respondents generally only believed to a limited extent that younger people were to benefit from mining (average 0.25). On the other hand they were generally more convinced that older people are likely to suffer from the project (average 0.68). Moreover, respondents were convinced that mining would increase the land and water scarcity in the region (average 0.77 and 0.66 respectively). Respondents very strongly feared eviction, with responses averaging at 1.38. Lastly, there was a strong conviction that the MCMP would increase the occurrence of local conflicts (average at 1.11), mainly in regard to land tenure and compensation payments between people, the government and the mining company. Figure 13 gives an overview of people’s responses.

Respondents were also asked to evaluate positive and negative impacts in regard to gender and

age. Relating to possible infrastructure improvements and enhanced electrification respondents judged all groups to benefit equally. However, respondents believed that compensation payments would benefit men and older people significantly more. This result is not surprising as land in the Mui Basin and Kenya in general is usually held by men and compensation payments are mainly based on the size of land. Employment and business opportunities were recognized to benefit the younger generation, whereas women and older people would benefit the least. Concerning the negative impacts that people would have to bear, respondents generally suggested that everyone would suffer, but particularly the old from environmental impacts, the loss of land and traditional livelihoods and the loss of cultural spaces, such as graves and holy grounds.

Thus, in general it appeared that respondents anticipated men and young people to benefit from the positive impacts whereas women and older people would be mostly negatively impacted. After generally representing the results of the survey, in the following, responses will be tested for correlations to gender, age, education and relative wealth.

### 8.2.2 Responses in relation to gender



**Figure 14 Responses to the MCMP in relation to gender**

Answers vary in relation to the gender of the respondents. Generally men were more optimistic in regard to the MCMP than women. Figure 14 shows responses in regard to gender. Half of the men interviewed were in favour of the project, whereas less than a quarter rejected it. Of the female respondents, however, only a third was in favour and half of them against it. Moreover, women saw the project as a threat (average 1.18) and not as an opportunity (average -0.23). In contrast, men saw both opportunities (average 0.51) and threats (average 0.95). Men also believed to a larger extent in employment and business opportunities to be created by the project than women. Responses averaged

at 0.76 (men) and 0.33 (women) in regard to employment and at 0.57 (men) and 0.24 (women) with regard to business opportunities. Moreover, women anticipated to a larger extent that mining would increase land and water scarcity. Responses given by women averaged at 0.87 (land) and 0.85 (water) in contrast to responses averaging at 0.71 (land) and 0.51 (water) by men. The fear of eviction was very pronounced upon female and male respondents alike. Answers averaged at 1.25 and 1.46. Lastly, women evaluated risks for future conflicts because of the MCMP higher than men (1.33 and 0.95 respectively).

Respondents were also asked to evaluate whether positive and negative impacts would affect various age and gender groups differently. These responses were again tested for gender relations. Once again women generally responded less optimistic than men. Women believed that possible infrastructure improvements would benefit men more than women, whereas men thought that benefits would be attributed similarly. In regard to compensation payments both men and women believed that men and old people would benefit most and that women would benefit the least. Moreover, both men and women did equally respond that men and the young would benefit most from employment and business opportunities. Both groups foresaw that the old would suffer the most from environmental degradation, land loss, change of livelihoods and the loss of cultural spaces.

Thus, responses to the first set of questions show a strong gender relation, whereas this correlation is not significant for the second set of questions.

### 8.2.3 Responses in relation to age

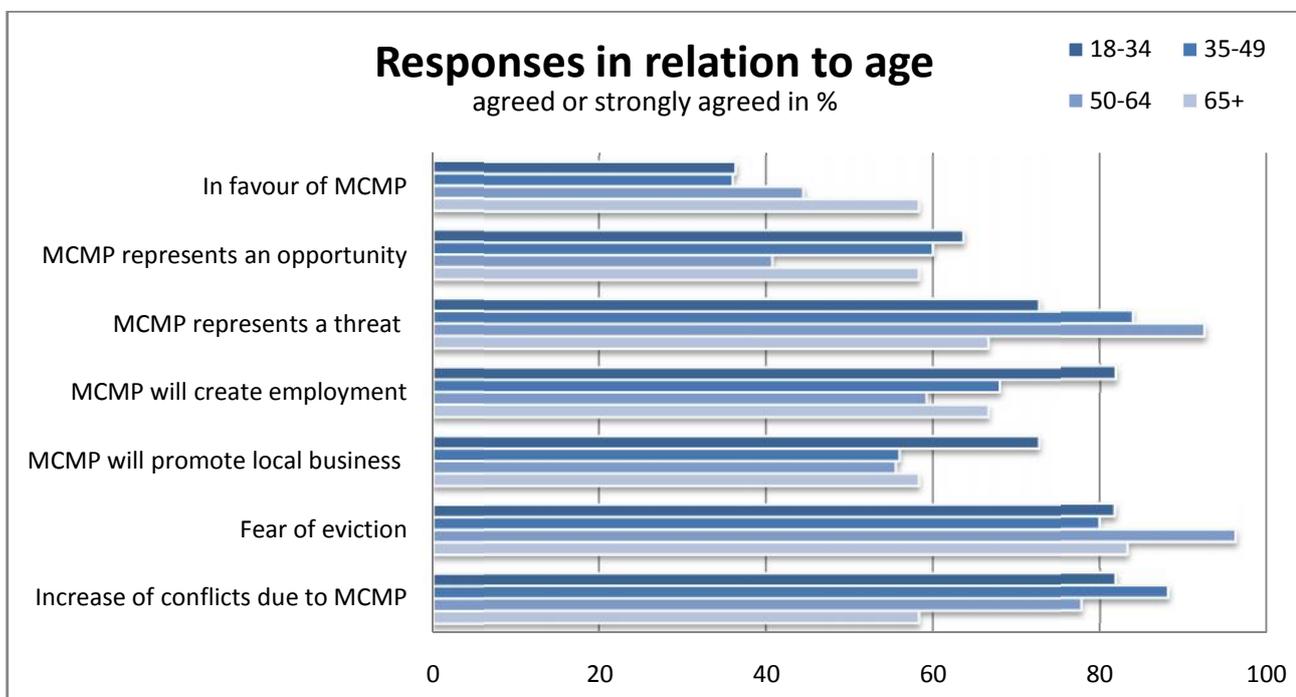
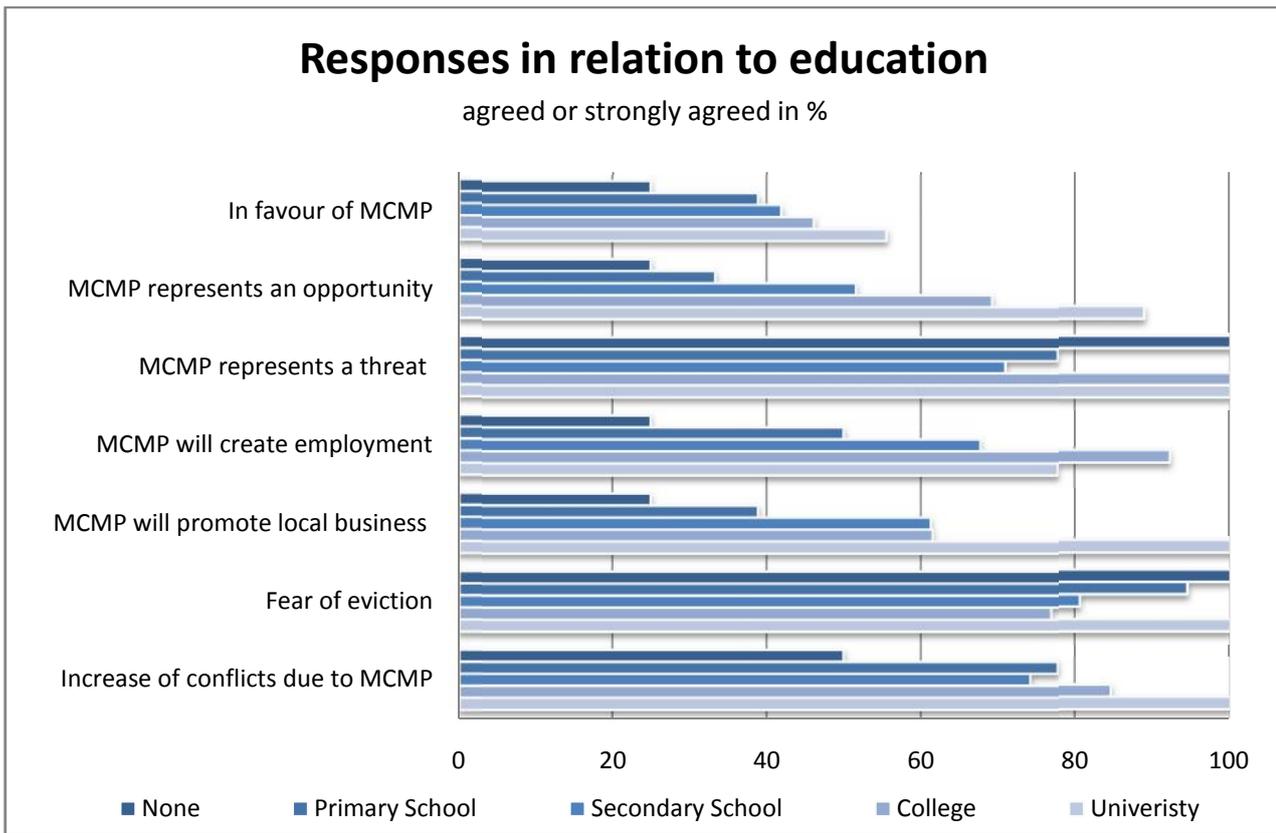


Figure 15 Responses to the MCMP in relation to age

Responses did also vary according to the age of respondents. Figure 15 shows responses in relation to age. The composition of the four age groups has been discussed in the previous chapter. Respondents aged between 50 and 64 were usually the most pessimistic, whereas respondents older than 65 appeared the most optimistic. Almost 60% of respondents older than 65 years were for instance in favour of the project, in contrast to only 45% of the 50-64 year old and 36% of the two younger age groups. During the interviews those aged above 65 often expressed indifference in regard to the potential impacts of the MCMP, arguing that they will not suffer or benefit from these for a long time. Respondents aged between 50-64 years argued that they are too old to change their livelihood bases. They represented the only age group that did not anticipate the coal mining project as an opportunity (average -0.19). Respondents aged between 35 – 49 years saw the most opportunities (average 0.52). All groups felt threatened by the MCMP, with the 50-64 years old the most (average 1.33) and the oldest group the least (average 0.67). In regard to employment and business opportunities the 50 – 64 year old responded the most pessimistic again (average 0.48 and 0.32). The youngest age group was the most optimistic in regard to employment opportunities (average 0.72), whereas those aged between 35 and 49 responded most positively in regard to business opportunities (0.61). All groups predicted an increase of land and water scarcity due to coal mining. The two oldest age groups were most concerned about land scarcity (average of 0.96 and 1 respectively), whereas the youngest age group was mostly concerned about an increased water scarcity (average of 0.91). Eviction was feared the most by the middle two age groups and the least by the oldest, but generally averages were elevated within all age groups (18 -34: 1.4, 35-49: 1.35, 50-64: 1.56 and 65+: 1.0). In regard to future conflicts it was again the middle age groups that anticipated risks the most (1.25 and 1.29) and the oldest age group the least (0.55).

Concerning the second set of questions responses are less correlated to the age of respondents. In regard to employment the youngest were the most optimistic about the benefit of the project (average 2). The 65+ year olds were the most convinced that older people would suffer from the loss of livelihood bases (average 1.5). Results show no significant age correlations in regard to other responses. Thus, generally the oldest and youngest respondents were the most optimistic, whereas the 50-64 year old appeared to be mostly reluctant in regard to the MCMP.

### 8.2.4 Responses in relation to education



**Figure 16 Responses to the MCMP in relation to education**

The analysis of responses also shows a correlation with regard to the educational status of interviewees (see figure 16). Around half of those respondents with a college or university degree were in favour of the MCMP. Conversely, those with no or primary education mostly opposed it (75% and 44% respectively). Respondents with higher education also saw the most opportunities in the project. Responses of College and University graduates averaged at 0.75 and 1.22 respectively in contrast to averages of -1, 0.41 and 0.17 for the least educated respectively. On the other hand, groups with primary and secondary education felt the least threatened by the project (average of 0.83 and 0.71), whereas those with no education and higher education felt highly threatened (responses averaging between 1.5 and 1.7). Concerning employment and business opportunities, it were again the higher educated that were most optimistic. Responses averaged at 1 and 1.22 respectively. In contrast, those respondents with no education were not foreseeing any employment or business opportunities (averages of -0.67 and -1). Moreover, the higher educated believed that young people would benefit more from mining than older people. Those without or with primary education, but also University graduates thought that old people were to benefit the least. All groups feared eviction with no particular relation to the educational status. Moreover, there was no significant correlation between the perception of an increased land scarcity and the level of education of respondents. Interestingly, respondents with higher education were not anticipating an increase of water scarcity due to the MCMP, whereas those without

and with primary education were. The higher educated perceived risks for future conflicts the most (average 0.54 and 0.44). Concerning the second set of the questionnaire correlations were not significant.

Thus, the higher educated groups judged the MCMP the most beneficial, even though they also highly perceived it as a threat.

### 8.2.5 Responses in relation to levels of wealth

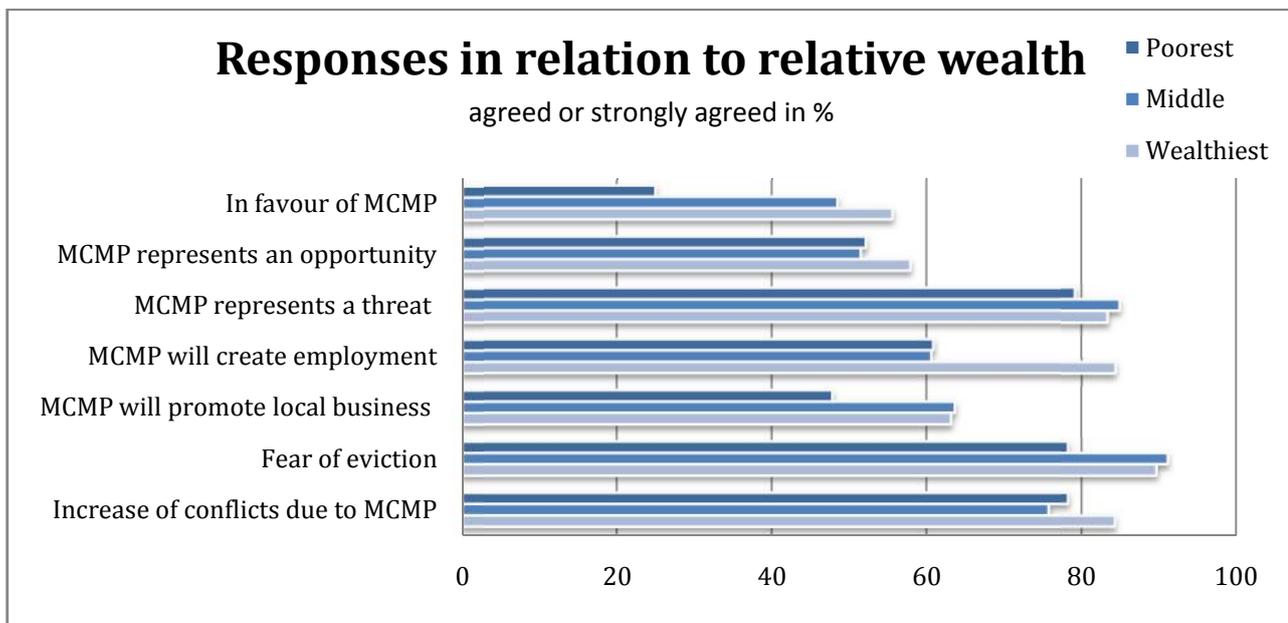


Figure 17 Responses to the MCMP in relation to relative wealth

Lastly, responses have also been tested for correlation with the relative wealth of respondents. Figure 17 gives an overview of the responses. The development of a wealth index for this survey has been discussed in the previous chapter. Before presenting the results it shall be pointed out that the developed index is itself related to the gender and level of education of respondents. Thus, men and higher educated respondents are generally less poor than women and lower educated respondents. Therefore, results might show similarities with gender and education correlations as discussed above. In general, the poorer the respondents the more pessimistic they were about the possible consequences of the mining project. The wealthiest group perceived the most opportunities of the project (average 0.65). This group also anticipated employment and business opportunities the most (0.95 and 0.68 respectively). The group representing the middle wealth group was the most convinced that the younger generation would benefit. The two wealthier groups predominantly believed that the older generation would not benefit. Eviction was feared mainly and most strongly by the two wealthier groups (average at 1.48 and 1.39 respectively) and to a lesser extent by the poorest (1.19). The wealthiest group strongly anticipated an increased land scarcity (average 1.11), whereas an augmented water scarcity was mostly anticipated by the poorest (average 0.9). Future conflicts because of the

mining project were strongly predicted by all groups without significant differences. Regarding the second set of questions there are no clear correlations. Thus, generally the wealthier households are the most optimistic towards the MCMP.

### **8.3 Conclusion**

The analysis of responses shows that opinions on the MCMP were generally very mixed, but show strong correlations in regard to gender, age, education and wealth of the respondents. Very generally it is the young, higher educated and wealthier men that perceived the MCMP as a chance for them. Men and the young are also perceived by all respondents to benefit the most from the positive impacts of mining. On the other hand, older, less educated and poor women anticipated the project as least beneficial to themselves. Again, all respondents considered women and the older generation to suffer most from the negative impacts of coal mining. Moreover, all respondents perceived the project as highly threatening and the fear of eviction was much accentuated in all responses.

The results are, besides some exceptions, not surprising. As argued, men are usually in possession of the land and therefore expected to receive compensation payments. The fear of men leaving their families once compensations have been paid was often expressed by women during the interviews. Furthermore, those with better education and more resources do have a better chance to adapt to changing livelihoods and benefit from new opportunities. Perceptions are that the poorest and most vulnerable groups, (women and old people) will have to bear the negative impacts of the mining project without being able to benefit from it.



## 9. Conclusion

This thesis aim was to assess the impacts of extractive industries on poverty in African developing countries and to evaluate which particular impacts local communities in the vicinity of the MCMP in Central Kenya are likely to bear. Since the MCMP has not started so far, the assessment has been of an explorative nature.

A dependence on the export of natural resources in developing countries entails particular economic and political risks. These reach from poorer economic performances, exposure to economic shocks, poor governance, corruption and, in particular cases, violent conflicts. These risks are having particular negative implications for the poor. Coal mining in the Mui Basin is likely only going to have limited negative macroeconomic impacts. Since coal is mostly going to be used domestically, Kenya will not suffer from the effects of the 'Dutch Disease' or the volatility of commodity prices, at least not due to coal mining. Moreover, the provision of cheaper energy by coal fired power plants might fuel economic growth in Kenya. The countries extractive sector is, however, on the verge of a significant growth and exports of other natural resources might very well have a negative effect on the overall economy. Politically, the MCMP might have a negative impact on the quality of governance and corruption. Royalty payments might render the government less accountable towards its citizen. Although, corruption and poor governance will affect the poor, local communities in the Mui Basin will mostly suffer from the environmental and social impacts of the coal mine in their vicinity. These include the degradation of commonly used resources (in particular water), air and water pollution and consequent negative health impacts, as well as social disruptions due to relocation measures that might lead to the destruction of local safety nets. The fact that the licensed mining company is Chinese is, on the other hand, unlikely to have a particular negative impact.

The current institutional and legal framework is not adequate to regulate the growing extractive sector in Kenya. The prospective legislation will deliver more benefits to the country, but is still providing too little benefits for local communities. Moreover, Kenya has so far not implemented the EITI standards, which would be a right step to counter corruption. Additionally, particular and specialized institutions are needed to protect the environment from the impacts of the extractive sector. Although, the current legal framework is insufficient, the Benefit Sharing Agreement on the MCMP between the government and the mining company provides a number of measures that promise more benefits to the country and the local community. These include the preferential employment of Kenyan nationals and the promotion of the local economy by an obligation to obtain supplies locally. On the other hand, the local communities might not be able to benefit from these provisions, since they are poorly educated and might not possess the capital and knowledge needed to found businesses. The addendum proposed by the community's Liaison Committee would, if adapted, ensure a number of benefits for local communities. In particular, the proposed shareholding in the MCMP would ensure that local communities would yield sustainable benefits, even if relocated.

With regard to the impacts of extractive industries in Africa the low expectations and anxieties expressed by the respondents in the Mui Basin towards the MCMP seem appropriate. Chapter 4 has established that the extractive sector's contribution to poverty reduction is very limited and might even harm the livelihood bases of the poor. The results of the survey show that people in the Mui Basin are rather threatened by the mining project and have generally low expectations in regard to employment and business opportunities. Respondents greatly feared the loss of their livelihoods and disruptions of communities due to relocations. Although, mostly not aware of the particular environmental impacts of coal mining, people did expect to suffer from air pollution and the destruction of the soils. Impacts on water resources and water quality were, however, generally underestimated by respondents. With regard to potential conflicts, people expected a strong increase of conflicts with the government and the mining company in particular, due to relocation and disagreement about compensations measures. As argued in chapter 4, coal mining in Kenya is very unlikely to lead to the kind of violent conflicts that natural resource extraction has triggered or sustained in other African countries. However, in consideration of some local people's complete refusal to leave, there might be violent conflicts on a local scale. Responses are strongly related to the age, gender, education and relative wealth of respondents. Thus, the younger, wealthier, better educated and male respondents usually perceive the mining project most positive. The older, poorer, less educated and female respondents, on the other hand, generally had a rather negative view on the project. Thus, the argument that extractive industries are more harmful to the poorest than beneficial is thereby confirmed by the views of the local population.

Although, negative macroeconomic and political impacts of the MCMP might be limited, environmental and social impacts have so far not adequately been addressed by the government and the mining company. More provisions need to be made to protect the poorest from losing their livelihoods bases. If things remain as they are, the MCMP will jeopardize the livelihoods of local communities in the Mui Basin and increase poverty in the region even more.

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## Appendix A

### G – Open Questions Mui Coal Mining Project

Q74) What are your expectations in regard to the implementation of the Mui Basin Coal Mining Project for yourself and the development of the region?

Q75) Would you say that you have been adequately informed and consulted about the mining project during its implementation process by the government authorities as well as by the acting company?

Q76) Do you expect the economic situation for you and your family to improve or worsen after the beginning of mining operations?

Q77) What has been offered in regard to compensations and/or rents?

Q78) Do you expect the base of your livelihoods to be changed due to the coal mining project and how?

Q79) Do you fear the loss of your land?

Q80) How do you judge the impact mining activities will have on the local environment?

Q81) Are there cultural spaces/places in the area that might be affected or have already been affected by the mining project?

### H – Quantitative Questions Mui Coal Mining Project

In this section please answer the questions by expressing your opinion on a scale of 1-5. Please indicate to what extent you would agree or disagree with the following statements:

	--	-	0	+	+
Q82) The coal mining project is an opportunity.					
Q83) The coal mining project is a threat.					
Q84) The project will create sufficient employment opportunities					
Q85) The mine will create opportunities for local businesses					
Q86) Especially young people are going to profit					
Q87) Old people are likely to lose out					
Q88) Many people here fear they will be evicted from their land					
Q89) I fear eviction from my land					
Q90) The mine will increase the scarcity of cropland					
Q91) The mine will increase the scarcity of pasture land					
Q92) The mine will increase the scarcity of water					
Q93) The mining project has increased conflicts					
Q94) I expect that there are going to be more conflicts because of the mine in the future					

Q95) In regard to the implementation of the coal mining in the Mui Basin which types of conflicts would you say **have** increased and between who? Likert scale (0, +, ++)

Type of conflict/ Between	Land ownership	Water	Agricultural Land	Pastoralist Land	Rents/ Compensations	Others
Between Individuals						
Households						
Tribes						
People and Government						
People and Mining Company						

Q96) In regard to the implementation of the coal mining in the Mui Basin which types of conflicts would you say **will** increase and between who? (0, +, ++)

Type of conflict/ Between	Land ownership	Water	Agricultural Land	Pastoralist Land	Rents/ Compensations	Others
Between Individuals						
Households						
Tribes						
People and Government						
People and Mining Company						

Q97) Which of these groups will in your opinion profit the most from these possible positive impacts of the Mui Coal Mining Project? (0, +, ++)

	Infrastructure	Compensations / Rents	Employment opportunities	Better Energy acces	Opportunities for Businesses	other
Young						
Old						
Men						
Women						

Q98) Which of the listed negative outcomes would you attributed to the respective group? (0, +, ++)

	Environmental Degradation	Land loss	Loss of Traditional Livelihoods	Loss of cultural Spaces	other
Young					
Old					
Men					
Women					